FEASIBILITY STUDY:
Merging City and County 911 Dispatch

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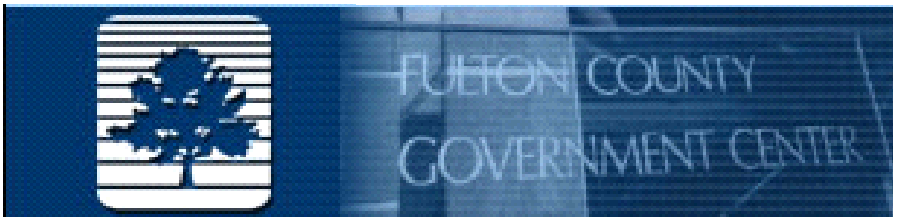

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SECTION I: INTRODUCTION

After a competitive Request for Proposals (RFP) process, GeoComm Corporation was selected in January, 2005 by the City of Atlanta and Fulton County (acting jointly) to conduct a study of issues related to the potential of merging the City of Atlanta 9-1-1 call taking and dispatching operation with the Fulton County 9-1-1 call taking and dispatch operations.

The following is from the RFP published by Fulton County (on behalf of both entities) for this work:

I. INTRODUCTION

The Fulton County Government and the City of Atlanta invite you to submit a proposal to provide services to determine the feasibility, benefits and constraints of establishing a Consolidated 9-1-1 Call Taking and Dispatch Center.

III. PROJECT OBJECTIVES

1. The objective of this study is to explore the feasibility of consolidating two public safety answering points/dispatch centers (PSAPs), Fulton County and the City of Atlanta 9-1-1 Centers.

2. Determine and report the specific technical, operational, and financial issues involved in consolidating the two (2) centers.

3. Determine the costs associated with the best alignment of equipment, staffing, PSAP location, operational configuration, and governance.

IV PROJECT SCOPE

1. Technical - Determine the technical requirements needed to support a joint dispatch center for the City of Atlanta and Fulton County. Deliverables shall include a description of the technology infrastructure needed to support a consolidated center and the degree to which existing City or County technology investments can be leveraged to achieve support that infrastructure.

a. Identify and recommend technical modifications or enhancements to the existing 800 MHz Trunked Radio Systems (TRS), Subscriber (field) units, trunked system control and monitoring and switching methodologies associated with TRS consolidation. Identify coverage reliability and audio quality requirements. Identify the microwave system modifications or enhancements.

b. Identify and recommend technical modifications of enhancements if appropriate to existing information systems, such as Computer-Aided Dispatch, (CAD), Records Management Systems (RMS), Mobile Computer Terminals (MCT), Field Based Reporting (FBR), Automatic Vehicle Location

(AVL), Automatic Number Identification Controller (ANI), and Automatic Location Identification Controllers (ALI).

c. Advise committee of regulatory requirements (e.g. Georgia Public Services Commission, Federal Communications Commission, etc.) and statutory requirements.

d. Discuss disposition of capital equipment for each member community with a dispatch center currently in place and present alternatives and submit a recommendation regarding same.

e. Discuss impact of joint dispatch on existing and related communication systems including, but not limited to joint voice and data systems, radio systems testing and activation of warning sirens, and telephone systems. Please note, for example, that several municipalities still retain and answer seven digit emergency telephone lines.

2. Operational – Discuss and present alternatives and submit a recommendation concerning the optimal operational configuration of joint dispatch center for the project group.

a. Develop a recommended governance and organization structure for the combined E911 center.

b. Conduct an assessment of the quality of call takers and dispatchers that are required to provide a P1 – P3 grade of service in a consolidated configuration.

c. Conduct a thorough assessment of staffing requirements which address employment issues involving both existing and prospective staff including but not limited to communication of findings of study to existing staff, re-hiring, displacement, seniority, compensation and benefits.

d. Discuss other transitional issues of an operational or human resources nature such as support services currently performed by dispatch staff such as records management and matron duties.

e. Describe facility requirements (e.g. – the physical space and general environment, etc.) including future growth requirements, if any.

f. Suggest a location for the facility, with a review of options that include but are not limited to facilities currently owned by the City of Atlanta or Fulton County.

3. Financial – Develop the business case for establishing a consolidated E911 call center for the City of Atlanta and Fulton County. The business case should include an estimate of all costs (capital and operating) associated with the development of the center, an estimate of realizable operating and capital cost savings, and any transition and other costs associated with the consolidation.

a. Describe the overall financial requirements to create the center and suggest an approach to sharing those costs between the City and the County.

b. Describe and present alternatives and a recommendation of a cost allocation mechanism to fund the establishment and subsequent operation of a joint dispatch center.

c. Recommend a funding mechanism for future replacement of equipment.

d. Develop a five (5) year comprehensive capital financing plan for the consolidated center. The capital financing package shall require no additional collateral other than the equipment; have no pre-payment penalties, and semi annual payments. The proposal should also include the principal financed, inherent interest rate and repayment schedule.

It is important to highlight here that there was no reference in the published RFP to two important tissues:

1. That the City of Atlanta, at the time of the RFP and at the time of awarding a contract to GeoComm was operating two separate 9-1-1 dispatch centers, one for the Atlanta Fire Rescue Department and one for the Atlanta Police Department, and that there had already been internal city approval for the merger of these two separate dispatch centers into one. The net effect of this is that the proposed dispatch center consolidation study would need to cover not two 9-1-1 centers, but three 9-1-1 centers (City Fire/Rescue, City Police and County). Because there was no interview process conducted for the potential consultants on this project, there was no opportunity for this important detail to have been developed prior to the start of the work.

2. That there had already been apparently irrevocable decisions made by the City of Atlanta regarding the partial electronic integration of operations at the Atlanta Fire Rescue Airport unit with various electronic components of the Computer Aided Dispatch system, radio system, mobile data computer system and other elements. There was no reference to any items or elements related to any aspect of the Airport Fire service in the RFP.

These two issues have loomed very large in the process of assessing the feasibility of this potential dispatch center merger. We point them out not as reason for any delays, requests for additional compensation, as a reason for any incompleteness or any other deficiencies in our study process, as we believe none exists. Rather, we point them out to establish the foundation that the study process has been significantly influenced by factors that may not have been known to all the participants when the process was initiated.

IMPORTANT NOTE: Between the time this study began (late January, 2005) and the time of this report (late May, 2005), the Atlanta Fire-Rescue PSAP function has been physically moved in to the space occupied by the Atlanta Police PSAP. Further, all phone calls reporting fires that are answered in this newly co-operated PSAP are handled end to end by the answering 911 operators and no "transfer to fire" for added interrogation and fire CAD entry takes place. Consequently, where this report refers to these calls being transferred to the physically separate Atlanta Fire-Rescue PSAP, that is no longer the case

BACKGROUND INFORMATION:

Both the City of Atlanta and Fulton County have operated sophisticated public safety communications dispatch operations for a number of years. Both entities employ technologies known as Trunked Radio, Enhanced 9-1-1 (E911), Computer Aided Dispatch (CAD), and Mobile Data. Public Safety Dispatch operations such as these are generally referred to as **P**ublic **S**afety **A**nswering **P**oints or PSAPs.

However, between the City and the County there are major differences and some similarities in the way these operations are staffed, managed, organized and conducted, and the technical platforms they rely on. We will provide background detail on these differences and similarities in the following pages.

Before we get into these differences, we will discuss the similarities in the services these PSAPs provide and how those services are generally provided. We will divide these issues into several distinct components, as follows:

1. E911 systems and issues
2. Computer Aided Dispatch (CAD) and Mobile Data systems and issues
3. Radio systems and issues
4. Personnel issues

1. E911 & GENERAL TELEPHONY SYSTEMS AND ISSUES:

E911 is a technical service offering of Bell South to which both the city and the county have subscribed, and on which both entities have also spent large amounts of (somewhat overlapping) money to purchase and maintain currency in the sophisticated equipment necessary to serve as an E911 PSAP. In its simplest sense, E911 is a technology whereby the public telephone network "knows" the telephone number from which a call to 911 is being dialed, and "knows" the address at which that phone number is installed. With this knowledge, the network can do three important things:

1. Determine what PSAP is responsible for answering 911 calls dialed from a specific address.

2. Route that 911 call, therefore, over dedicated trunks to that most appropriate PSAP.

3. Use the calling phone's telephone number *(ANI – Automatic Number Identification – which is different from Caller ID™ in that it cannot be blocked by the caller, and in that it precedes the call through the network, unlike Caller ID, which flows through the network after the call is delivered to the destination phone between the 1st and 2nd ring)* via which E911 retrieves a data display called ALI (Automatic Location Information) from a database maintained by BellSouth which presents a display to the answering 911 dispatcher showing:

- The street address location from which the 911 call was placed

- The name of the party to whom the phone bill is sent
- The political jurisdiction in which the referenced address is located
- The appropriate police, fire and emergency medical service providers for that address
- The telephone service provider who provides the phone service at that location
- The appropriate PSAP to which this 911 call should have initially routed

In general (and this is the case in metro Atlanta), all 911 PSAPs *(and there are dozens of such PSAPs in greater metro Atlanta's several counties)* are on an inter-connected E911 network such that a 911 call received at one PSAP can be transferred to another PSAP within that region, and all of the data attributes shown above will get transferred with the call to the recipient PSAP. 911 calls can also be transferred "off network" to regular 10 digit phone numbers with no degradation in voice quality, but none of the E911 ALI data would be transferred with that call.

In general, E911 is divided into two sub-elements:

A. That portion outside of the PSAP
B. That portion inside the PSAP

For the portion outside the PSAP, the customers (the City and the County) pay a monthly "tariff rate" to Bell South for the service elements known as E911. This monthly charge is based on the number of telephone lines in the jurisdiction to which this service is being made available. For both the City and the County, that number would be into the hundreds of thousands of phone lines in each jurisdiction. Even if the city and county were to merge their 911 call taking operations, this number of phone lines to which E911 service would be available would not increase or decrease, therefore, the monthly recurring charges for the external network and database portions of E911 service should not change.

As it relates to that portion of E911 inside the PSAP, the first question that is asked prior to the implementation of E911 by BellSouth is, **"What PSAP will answer the 911 call for the political jurisdiction placing the order for E911?"**

In the vast majority of cases in the U.S. at large, the answer to this question is **"The PSAP Operated by the County".** There are about 3,150 county and county-like entities in the U.S. *(A county-like entity would be like the City of St. Louis, MO, which is not a part of its surrounding St. Louis County; or the City of Richmond, VA, which is not a part of its surrounding Henrico or Chesterfield Counties).* In the vast majority of these cases, the PSAP operated by the County is operated by the County Sheriff's Department.

In cases where there are cities within the County which operate their own police departments, those cities/ police departments either choose to staff and pay for the operations of their own 911 PSAP (thus becoming another E911 PSAP on the above referenced inter-connected E911 network) or they choose to obtain their 911 call taking and radio dispatch services from the County PSAP, for which they may or may not pay a fee for said services.

In Fulton County, there are both models in operation. On the one hand, the City of Atlanta chose to operates its own 911 PSAP. Several of the suburban Fulton County cities also operate their own 911 PSAPs. The cities which have police departments but choose not to operate PSAPs receive their 911 call taking and dispatch service from the Fulton County 911 center, which is operated by the County's Emergency Services Department rather than the County's Sheriff, Marshal, police or fire departments.

Consequently, when the question "What PSAP will answer….." was asked in Fulton County, the initial answer was something like:

- 911 Calls from all addresses in the City of Atlanta will route to at the City's PSAP
- 911 calls from all address in suburban Fulton County cities who choose to operate their own PSAPs will route to those cities respective PSAPs
- 911 calls from all other addresses within Fulton County will route to (by default) the Fulton County 911 PSAP.

These answers were totally within the discretion of the Cities and the County, and the question could have been answered in any number of ways.

As indicated previously, in many counties it was decided to have only one County PSAP and all calls would go there. Generally, these tend to be the more rural, less populous counties. Generally, in large urban areas where there are large city police departments serving a city located within a County (such as Atlanta within Fulton County) it was most often decided that the big city should have its own 911 PSAP, and the County would have its own PSAP and (usually) any number of suburban communities would also have their own PSAP. Exceptions to this model for large cities at the inception of E911 in the 1980's and early 1990's were very rare, indeed.

Over the past several years, however, there has been an increasing interest in exploring the potential of merging large city 911 PSAPs with their County's 911 PSAP (small or large). Similarly, there has been a growing interest in exploring the merger of PSAPs among a number of (usually contiguous – for radio system coverage reasons) suburban cities in larger metro areas, as well as merger of PSAPs of neighboring, more rural counties. We will discuss some of these in detail later on.

We've established that in Fulton County it was decided that the City of Atlanta would answer its own 911 calls, some suburbs would answer their own, and the County would answer what was left over. This then led to the question: **What department will run the PSAP that will answer these 911 calls from within a 911 jurisdiction?**

In the case of Fulton County, it was decided that this agency would be of a type that is generally referred to as a "neutral agency". Specifically, this role was assigned the County's Emergency Services Department, which is not a public safety "first responder" department such as County Police or County Fire. It was also decided that the County's PSAP would be a "service consolidated" PSAP in that the one County PSAP would be the 911 call answering PSAP and radio dispatching center for all public safety services of the County (County

Police, County Fire, County Sheriff, County Marshal, and County contract EMS), and that callers to 911 would not have to be transferred (once initially answered) to any other PSAP to have their call serviced. In probably 75-85% of the Counties in the U.S., a County PSAP such as this would be operated by the County Police or County Sheriff (whichever the case may be in a given county --- most counties do not have County "Police"), but in Fulton County it was determined to use this more "neutral PSAP" model. This is a model that is gaining significant traction throughout the USA, especially as the result of PSAP consolidations involving former Sheriff's PSAPs with several of a county's city Police Department PSAPs. It is often the case that local city police departments will refuse to participate in a consolidated PSAP that is "run by the Sheriff", and they insist on a more shared management model, or a PSAP run by neither the Sheriff or the Police department(s).

In the case of the City of Atlanta, we have established that the decision was made that the City would operate its own PSAP. It was further decided that City would actually operate **two PSAPs**. One would be the initial (Primary) PSAP where the city's 911 calls would be initially answered, and the other would be a secondary PSAP to which calls requiring Fire service would be transferred. This is a very common "big city model". In fact, we are aware of only a handful of big cities that did not choose this model at the inception of their E911 services. One of these very few was the City of Minneapolis, in 1982, where GeoComm's Paul Linnee was the Director of Emergency Communications for many years. There, when the question was asked at the higher County level of *"Where will 911 calls be answered in this County?"* the answer was *"At 11 PSAPs"* which were one County Sheriff and 10 cities in the County. When the question *"Which Department will answer 911 calls within the City of Minneapolis?*" was asked within the City, the answers were "*The Police Department will!*" **and** "*The Fire Department Will!*". Given the fact that both departments had fully staffed Communications Divisions, the City Council and Mayor decided differently, and they chose to create a separate city department called Emergency Communications, which would report directly to the City Council and Mayor, but would receive operational guidance from a formal User's Board, and that User's Board would select and supervise a Director of Emergency Communications (Linnee). This new department was initially staffed by civilian and sworn employees taken from both the former Police and Fire department communications divisions, but within 5 years, the staff and management was 100% civilianized and cross trained in both police and fire dispatching.

But few large cities have accomplished or attempted such a police-fire PSAP merger. It is often and usually strongly resisted by the Fire Departments, who perceive that in such a merger, their function will represent a far smaller portion of the workload and dedicated workers on a given shift, and their ability to influence operations and management would be similarly diminished when compared to operating their own PSAP. Nationally, about 80-85% of all calls to a 911 center relate to police matters, with the balance relating to fire or EMS. And in an area (such as Atlanta) where the fire department is not also the EMS service (ambulance provider), that means that the proportion of the work load of a merged police-fire PSAP would be viewed as even more titled towards police.

Interestingly, when cities look at merging their internal police and fire PSAPs, the organizational model most often favored by the fire service is a model like the above

referenced Minneapolis model where a jointly appointed and controlled or guided Emergency Communications Department is created. We have heard that one of the reasons this is favored by fire is along the lines of ***"at least the police would not be controlling our PSAP and we'd have some formal say in operations".*** Correspondingly, we most often hear from large city police departments that they're comfortable with ***"fire coming into our PSAP operation, but we, the police, must still control our PSAP operation."***

All of this having been said, Atlanta chose to have a functionally separate Police PSAP and Fire PSAP, and now there are apparently steps underway to merge them into one operation, with the stated intent of providing cross training to all staff in the performance of both police and fire related PSAP duties.

While we are fully aware of the reasons behind this internal PSAP merger, out of professional commitment we feel obligated to articulate the caution that, in and of itself, *this Atlanta Police-Fire/Rescue merger is a major operational undertaking*, often fraught with acrimony and difficulties, and we believe that interposing this internal City PSAP merger in this midst of the potential City – County merger is a complication that might be better avoided.

We mentioned being aware of the reasons behind this internal City PSAP merger. Specifically, there exists in Atlanta a unique call processing situation that in our many years of working in and observing and studying dispatch center operations in small, medium and large entities we have not seen before.

This unique situation relates to the receipt and processing of Medical Emergency calls from within the City of Atlanta.

As we have established above, 911 calls from addresses and locations within the city route to and are answered by the Atlanta Police 911 PSAP. There the police 911 operator first inquires as to the nature of the caller's emergency need. If that emergency need is for a medical emergency, that 911 call is then transferred ("on the 911 network" as described earlier) to the Fulton County 911 center. The reason for this is that the County has responsibility under state law for the management and oversight of EMS services, as well as the fact that the City fire-rescue department does not operate a full paramedic ambulance service. Consequently, since the medical emergency call may require (at a minimum) the response of an ambulance, and since there is no "city ambulance", and since the County is the 911 call taking entity for the private ambulance service (Grady EMS) assigned to service the City (as well as being the 911 call taking and radio dispatching service for the private ambulance service contracted for the balance of the County – Rural/Metro) this city Medical Emergency call needs to get to the County 911 center so they can talk to the caller, determine the specifics of the need, provide guidance (more on that in a bit) to the callers, and then cause for the incident to be responded to by Grady, as well as have the ability to monitor Grady's time performance in responding to such calls.

In an attempt to simplify the explanation of this somewhat convoluted process, we see this 911 medical emergency caller from within the city being answered by the city, interrogated

by the city 911 operator, then transferred to the county where it is answered again, another interrogation is conducted, medical guidance is provided and then an "order for an ambulance response" is sent to Grady, and Grady EMS then radio dispatches a response unit to the scene.

But that's not all….. IF the medical emergency in the City is an incident (based on a series of guidelines) to which it has been determined that a joint response by both Grady EMS and Atlanta Fire Rescue might benefit the outcome (usually the most severe and time critical incidents like heart attacks), then the Fulton County 911 Center must place a regular phone call to Atlanta Fire-Rescue PSAP and tell them the address (the 911 call with the ALI is not transferred) so that Atlanta Fire-Rescue can then respond, along with Grady EMS

In our observations and discussions we were told of numerous cases of the above process taking multiples of minutes, and there is a palpable sense of frustration on the part of the Atlanta Fire-Rescue Department with this situation. However, we have not delved into any of these incidents in an investigative mode to determine their specifics or the accuracy of their alleged details, with an eye towards identifying the specific system components responsible for the largest part of the perceived or actual delays.

Nevertheless, it is understandable that the Atlanta Fire-Rescue service wants to fix this situation, and it is, undoubtedly, a situation that does need fixing. Further, **within the CITY-ONLY context**, the apparent best option available to the City was deemed to be to "consolidate" 911 call taking and dispatching within the City's 911 system and have only one 911 PSAP for the city.

While not a component of GeoComm's tasking, as we understand the plans, the City's 911 operators, in what will become a merged police-fire PSAP, will answer the 911 calls. If it is a fire call, they will take the fire related information and enter the fire event information into the CAD system for transmission to the fire dispatch position(s) within the merged PSAP facility, where it will be received and radio dispatched to the appropriate fire units. If it is a Medical Emergency call this "universal police/fire/EMS call-taker" will answer the call, collect the EMS response related information, be trained to provide appropriate medical guidance to the caller (more on that later) and enter a response event in the CAD system. If the response event is coded for an AMBULANCE RESPONSE ONLY, the event will follow an electronic pathway (yet to be developed) from the Atlanta PSSI brand CAD system over an interface to the CAD system operated by Grady EMS outside the City's PSAP. Grady will receive that CAD event from the City PSAP and will then assign an ambulance to respond.

Unknown in this procedure is the vehicle and mechanism via which the County Emergency Services Department (which also operates the County's PSAP) will collect and amass the data regarding Grady's response times and procedures so as to develop a picture of the level of services being provided by Grady, so as to enforce provisions of the County's contract with Grady.

Several times above we have mentioned the term "provide medical guidance" to the 911 callers on Medical Emergency calls. This process has developed into a highly specialized

discipline onto itself, which is referred to as **Emergency Medical Dispatch** or EMD, which has two specific objectives:

1. To provide specific instructions to the callers on medical emergencies to enable them to provide critical life-saving services to the victim to prevent death or further a better outcome prior to the arrival of EMT or paramedic field responders.

    a. These services have proven time and time again around the U.S. to have had significant beneficial impacts on event outcomes. There are legions of cases where properly trained and EMD certified 911 operators have talked a panic-stricken caller through giving their not-breathing baby CPR or similar heroic outcomes.

    b. Being able to provide EMD in a competent, informed, medically sound and legally defensible manner requires that the 911 staff be trained, certified, periodically re-trained and re-certified, and that there be a comprehensive quality control program in place to monitor and evaluate EMD performance and outcomes.

2. To provide an opportunity for stressed EMS and other response services to have their requests for service more effectively triaged and managed so that the proper resources are deployed to the proper situation.

    a. For example, sending an Advanced Life Support (ALS) paramedic ambulance to a broken arm at an accident scene (simple fracture) when a Basic Life Support (BLS) or Fire Rescue rig with EMTs or paramedics on board would be available, and thereby moving that ALS ambulance out of position for that critical heart attack call that is going to happen in five minutes, is the sort of thing that one would like to avoid. Doing effective triage can work towards that goal, and when dealing with 10's of thousands of such events in a year, gaining an edge at the margins on each incident can translate into significant gains in overall outcomes and reduced response times, system-wide.

WIRELESS 9-1-1 SIGNIFICANTLY COMPLICATES THESE PROCESSES

Throughout the above sections, everything we said presumed that the E911 call was being routed to and answered by the PSAP most appropriate for the address from which that call was dialed. The E911 process that permits this is called "Selective Routing", and it is a capability that is almost totally responsible for the technical ability of **any** City and County to have their own 911 PSAPs. Without effective selective routing, a 911 call could only go to the one PSAP deemed to be appropriate for a given telephone exchange (not area code) area. In any given metro area, there are literally dozens of telephone exchange areas, not to mention the recently arrived Competitive Local Exchange Carriers, who tend to serve a much larger area with as few as one central office exchange. The most important aspect is that telephone exchange service areas almost never follow political jurisdictional boundaries (except for state boundaries – where the Bell company is not the serving company on both

sides of that state line - or local boundaries that are natural dividers such as major rivers), so routing 911 calls by exchange areas is almost certain to mean some City calls would route to the County PSAP and some County calls would route to the City PSAP.

UNFORTUNATELY, WITH WIRELESS 911 MUCH OF THE EFFECTIVENESS OF SELECTIVE ROUTING HAS VANISHED.

Simply put, calls dialed to 911 from wireless phones (meaning cell phones and not home-type cordless phones) cannot be routed on the basis of an address in a political jurisdiction. There is no address of where the phone is located, because the phone is mobile. With what is called "Phase I" wireless 911 service (implemented due to an FCC mandate on the wireless service providers), the best that can be accomplished is routing of a wireless 911 call on the basis of the cell tower of original receipt of that call, including the ability to treat a given cell tower as having three or four "sectors" (directional antenna arrays). In the case of a "three sectored" cell tower (see photo below), one can route all wireless 911 calls initially received by the set of antennas facing North to one PSAP, all the calls originally received at the Southeast facing set of antennas to another PSAP (or the 1st PSAP), and all the calls originally received at the Southwest facing set of antennas to yet another PSAP (or one of the other two PSAPs).

If the above cell tower were located right in the heart of a large part of Atlanta, miles away from any boundary, probably all the calls processed through all sectors would have originated within the City and could be routed to the City's PSAP and would not be a major problem. **But a large number of these towers are NOT so located.**

As it relates to Fulton County, the unique geographic footprint of the County's 911 service area pretty much ensures that many of the cell towers located within that area are also receiving calls that originated within the city or in the neighboring counties or cities.

There is also a **Phase II Wireless E911** service (also mandated on the wireless carriers by the FCC), under which the carriers are required to determine and send to the 911 PSAP the

caller's actual physical location to within a few hundred feet. And, while this is an excellent additional tool for the answering 911 operator to determine where the call is coming from (presuming the 911 dispatcher is served by a GIS map on which the caller's location can be automatically plotted --- which both the City and County PSAPs have), it does not generally solve the above selective routing problem. The reason for this is that the location that is derived by the wireless carrier is not derived early enough in the call handling process to be used as the routing determinant (it would need to be known within 1-3 seconds, and it generally not calculated for upwards of 15 seconds). Therefore, the default mode of routing even Phase II wireless 911 calls is still based on the above described basis of the originally receiving cell tower or sector.

Consequently, if one understands that the reason it was practical in the first place for the City and County to have their own PSAPs serving carefully drawn political jurisdictional boundaries and accepting 911 calls from carefully routed known addresses, then it becomes easy to see how if the underlying 911 call routing premise goes away or is significantly undermined, the logic and the practicality behind having multiple 911 centers in a compact area is also significantly undermined.

Simply put, it is now a fact that a significant number of the wireless 911 calls answered in the Atlanta PSAP are calls that require transfer to the County PSAP (or some other neighboring jurisdiction's PSAP) for proper handling, and vice versa. There is no reliable good count of these calls, because a given call may have routed to the City or County properly based on where the call was placed from, but may be in regards to an event in the jurisdiction that the caller just left, and in the time it took them to find their phone, call 911 and get their call routed and answered, they have traveled into a new 911 jurisdiction. Merely counting wireless 911 calls transferred would not necessarily present an accurate picture.

IMPORTANTLY, HOWEVER, WE ARE SEEING WIRELESS 911 CALLS ACCOUNTING FOR NOT LESS THAN 40% OF ALL INCOMING 911 CALLS IN A URBAN PSAPS, AND UP TO AS HIGH AS 78% IN AFFLUENT SUBURBAN COUNTY PSAPS.

GENERAL TELEPHONY ISSUES

In addition to answering hundreds of thousands to millions of calls dialed to 911 from wireline and wireless phones each year, the PSAPs also answer a large number of calls dialed to regular 7 digit numbers each year. These "non-911 calls" are not necessarily "non-emergency" calls. In fact, due to the deficiencies of a new telephone-like technology called "Voice over Internet Protocol" (VoIP), some local emergency calls cannot be presented to the PSAPs over their 911 lines and must come in on these 7 digit lines. Also, calls from alarm companies reporting incidents at locations they monitor come in on 7 digit lines, as well as many calls from people who either don't want their location or name known (which could be discernable from the E911 ALI data) or don't think the incident they are reporting rises to the level of a "true emergency" permitting the usage of 911.

Both PSAPs have adopted a type of telephone answering system known as Automatic Call Distributor (ACD). An ACD has several distinct roles. On the one hand, it knows about all calls that are trying to come into the system and get answered at any given instant. On the other hand, it knows about all the 911 operators ("attendants" in ACD parlance) who are on duty, and who are free (not on another call – or in some other "busied out" or unavailable status) to answer a call, and among those who are available for a call, which operator has been "idle" (having not answered a call) for the longest period of time. It can then contribute to leveling off the work load among the several operators on duty, and avoid situations where two operators located several yards apart both pick up on the same call, and both thinking the other operator has the call, they both hang up.

ACD systems also play an important role in collecting much data about a PSAPs telephone activity and performance in terms of average ring tines, average call durations, number of calls by time of day, day or week, etc.

With an ACD it is also possible to configure different operator positions with different "telephone roles", as Fulton County has done.

Before we explain what it is that Fulton County does that is different than many PSAPs, we need to establish the respective staff roles in a large PSAP.

First of all, there are two general types of operating modes within a PSAP. One is called **ONE STAGE**, where the same person who answers the phone also collects the information from the caller and talks to the responder(s) on the two way radio. In general, one stage PSAPs are limited to PSAPs serving less than 150,000 or so persons and who have less than four or five persons on duty per shift. Therefore, since the vast majority of PSAPs fall within this size category, the vast majority of PSAPs are one stage PSAPs.

Logically, the other general operating mode is called a **TWO STAGE** PSAP. In these there is a division of labor between those who answer incoming phone calls and those who radio dispatch the responders. Two stage PSAPs are virtually universal in all large PSAP agencies. Both Atlanta Police and Fulton County are two-stage PSAP operations.

However, within the "call answering" workstation role (which, in a two-stage PSAP are separate from and usually different than the radio dispatching workstations) there can be different roles assigned, depending on the capabilities of the ACD system.

Specifically, what Fulton County has done is to create two distinctly different "call answering roles" in their PSAP. The role assumed by the person assigned to call taking on a given shift is determined by how they sign on to the ACD system. Until they sign on, no calls at all will be presented to their work station for answering. Once they sign on, they will be available for all calls appropriate for their assumed "role" for as long as they are signed on in that role. The two roles are "Call Screener" and "Call Taker".

Simply put, the Call Screener role answers all 911 dialed calls initially and determines if it is a true, life safety (heart attack, for example) or property (burglary in progress) time-critical

emergency call. If it is, the Call Screener keeps that call and processes it through to completion, to include the provision of the Emergency Medical Dispatch (EMD) guidance and protocols. If the 911 call (while probably important) is not life or property time-critical, the Call Screener transfers the call to the Call Taker for less time-critical processing. If the Call Taker(s) are tied up, necessitating that the caller be on hold for a few seconds or minutes, this is deemed acceptable since their call had already been triaged and deemed to not be time-critical.

The rationale behind the deployment of this system is quite straightforward. One of the leading metrics used to measure the performance of 911 PSAPs is their "average call answer time". In other words, of one hundred 911 calls presented to a given PSAP in a given time period, how long did the average call ring before being answered. In general, these metrics are stated in terms like "Our goal is to answer XX% of 911 calls in less than X.X seconds, on average". The premise behind this metric is that the 911 call is presumed to be urgent or the call would not have been dialed to 911, and that the caller is not likely to appreciate either listening to 6, 8 or 10 ring cycles (each ring-silence-ring cycle is about 5.5 seconds) or being subjected to a ***"we're sorry, all 911 operators are busy, please hold for the next available operator"*** type messages. In order to avoid either of these pitfalls, a PSAP needs to strive to keep at least one operator as close to available as possible at all times to be able to immediately answer that next 911 call. One way to do that is to limit the length of time a PSAP's "front line operators" are spending on calls, and the "role playing" model employed at Fulton County has been proven to achieve that objective.

2. COMPUTER AIDED DISPATCH (CAD) AND MOBILE DATA TERMINALS (MDTS)

In addition to the E911 voice and data network and PSAP technologies discussed above, there is another major area of general commonality between the City and County 911 operations. Both agencies operate CAD and Mobile Data systems. The significance of this is that both operations have had to develop and implement procedures that rely on and take advantage of opportunities presented by CAD. However, despite the fact that they are both CAD users and very CAD literate, they have significantly different CAD software platforms and use them for different things and in different ways.

For persons not intimately involved in PSAP operations, CAD can be a difficult technology to grasp. Perhaps the best way to describe CAD and what it does is to describe the previous manual processes that CAD replaced. That way it becomes easy to see what role CAD is playing.

As a preface statement, CAD became desirable/necessary because of the existence of large dispatch centers such as those in Atlanta and Fulton County. It did not become necessary as a result of E911, per se. CAD was developed and introduced in many cities before E911. Furthermore, while CAD has now made its way into many smaller PSAPs, in those places it is used primarily as an "after the fact compiler of what happened on a given event", rather than the integral tool it has become in driving how an event is handled in larger PSAPs.

The manual process that CAD replicates (*and can greatly improve upon*) went like this:

- Phone rings, emergency call-taker answers phone
- Party describes some emergency service need
- Call-taker grabs an "IBM card" and circles certain key words pre-printed on that card like ROB or SHOT or BURG (burglary), FIRE or FIGHT along with other qualifier words like "GUN" and/or "IN PROG" (in progress)
- Call-taker hand writes (usually scribbles) the address of the above incident on the card, with no way of knowing if it is a valid address or is even in his jurisdiction, for sure. And certainly without knowing (unless from memory) what other events have happened at that address earlier today, this week or at any other time.
- Call-taker may assign a PRIORITY to the incident on the card by circling a "1", a "2" or a "3", for example.
- Call-taker puts that IBM card onto a multi-lane conveyor belt, where one lane is for cards headed for the radio dispatcher handing one part of the jurisdiction, another lane for the dispatcher handling another part of the jurisdiction, etc. Call-taker hopes the card does not fall off or get jammed up in the conveyor belt.
- Card arrives at the intended dispatchers position and drops off the conveyor belt onto the dispatcher's desk. Dispatcher reads the card (hoping it is legible) and ascertains what is happening where and how urgent it is based on the priority.
- Dispatcher then tries to determine which fire response zone or police patrol beat or district the incident is occurring in.
- Dispatcher then checks either a manually updated status board (magnets, perhaps) or scratch paper on which he has been trying to maintain the status of the several dozen response units over which he has assignment control, and their general locations.
- Dispatcher then uses the radio or fire station alerting process for notifying and directing units to respond to the incident.
- Dispatcher then attempts to jot down on the original IBM card the all of the important info that is aired on the radio about this event, who responded, when they arrived, what they saw when they arrived, when they cleared the scene, etc.
- When the field handling of the incident is under control and/or all done, the field units will need to have the "Incident Control/Serial Number" so they can use it for the various reports they will have to now write.

This is the process that CAD automates, **and then some**.

It can be said that CAD lives and dies not so much on how the software is written, or what computer hardware it runs on, but on the quality, currency, accuracy and jurisdictional relevance of the FILES and TABLES that underpin all of the decision matrices operational within CAD. Of these files, the most important are the GEO FILE and the INCIDENT TABLE.

The GEO FILE is constructed to be able to look at any address or common place name location (such as "Atlanta Underground" or "City Hall" or "capitol") or latitude and longitude (now important with Phase II wireless 911) and from that address decide which fire, police or EMS response zone is appropriate. Then it needs to know at which inter-connected CAD workstation the dispatcher handling the appropriate service for this incident

is located now *(these can change throughout the day as dispatch areas can be re-configured as radio dispatchers come and go)* so it can send the event to that workstation for radio dispatching. When and if the dispatched response agencies change their service response zones through such activities as annexation, fire station relocation, patrol/district beat boundary changes, etc., the Geo File must be updated first. This can be a huge undertaking and can affect hundreds to thousands of individual "block face" records in the CAD system.

The INCIDENT TABLE is another critical driver in any CAD system. This is where the decisions need to be made about:

- How many different type of incident codes will we use?
    - In other words, how precise should we be?
        - Is one code "BURG", to represent BURGLARY enough? Or do we need a BURGDP (burglary of dwelling in progress) and a BURGBIZP (burglary of a business in progress), etc.
    - If we want each of these incidents to have a different priority for response, then they probably each need their own incident code in the incident table.
    - It is absolutely common to see one hundred or more incident codes in use in a mature CAD operation.
- Which agencies should respond on each different type of incident code?
    - This is irrelevant if the PSAP agency in question is only dispatching ONE response service.
        - In other words, in the Atlanta PD 911 center of today (prior to the merger with fire-rescue) when the police 911 operator decides to enter an event in CAD, there is no question about police, fire or EMS. It will only be for police. If it were a fire event (or a police event that also has a fire response component, arson with a homicide, for example) once the call is transferred or placed to fire dispatch, they will enter their own CAD event using their own terminology.
    - But if the PSAP is one where "universal call takers" take all 911 calls and enter CAD response events for all those calls, then the CAD they are using should have an INCIDENT TABLE that has been developed with thorough input from all response agencies dispatched form this PSAP.
        - For each incident code, a "round table" session should be held with cognizant officials from all of the potential response agencies that are dispatched by this PSAP and a series of questions should be answered and the INCIDENT TABLE built based on the results of these deliberations.
            - For example, if one assumes the incident code "PI ACC" standing for Personal Injury Accident the process should look like this:
                - Should police respond? **YES**
                    - If YES, how should their response to this event be prioritized against competing demands for police service in that zone? (Only fully relevant if there are limited resources and more incidents

than available resources ---- not an uncommon situation in major cities, by the way)
        - If YES, a version of the CAD event must route to the proper police zone dispatcher
    - Should fire respond? **YES,** probably for rescue, extrication or wash down work.
        - If YES, then a version of the event must route to the fire dispatcher workstation handling this fire agency.
        - Priority is less of an issue in fire, since most fire responses would be of the same high priority, but it is not irrelevant, as some fire responses are for "stand-by" type of activity.
    - Should EMS/ambulance respond? **YES**. By definition this was classified as a personal INJURY accident.
        - If YES, then a version of the CAD event needs to either be routed to the CAD workstation (assuming the EMS service is dispatched by a person using this same CAD system) from which this responding ambulance service is being dispatched, or be sent on an interface link (significant development work required for this) to the external CAD system which the responding ambulance service is using for their dispatching.
        - Again, priority is somewhat less of an issue here, but not irrelevant.
- In the end, the incident type has been fully defined, all response requirements and priorities are agreed upon, and this part of the INCIDENT TABLE can be locked down.
- Next, each response agency may choose to tailor their responses by incident type. This means that when the PI ACC event arrives at the fire dispatcher workstation, the CAD system can "know" that for a PI ACC in front of 1234 Main Street, the dispatcher should send one fire-rescue truck, and nothing else. On the other hand, if the incident type were to have been F-BLDG (fire building) at 1234 Main Street, then CAD would have recommended 3 engine companies, two ladder companies and a Chief officer as the responding units.

The final important and essential general understanding of CAD may sound a bit odd. It is that **CAD is not meant to be historically accurate.** If one wants to know how many burglaries there were in Atlanta in a given year, one should not merely go to the CAD system and form the query, "HOW MANY BURGLARIES IN 2004?" If one did that, the number one would get should not necessarily be accurate. This is because CAD should not be used to count what really happened. Rather, CAD is a transactional process facilitator that needs to react to ***what was perceived as happening when the response was initiated,*** not what was really happening once all the responders got there, sorted out the stories and details and came

up with the final "after-the-fact" picture. In many cases what may be **perceived** by the 911 caller as a "burglary in progress at the Jones house", may turn out to be the Jones' teenage boy crawling in the window late at night because he lost his house key. But the police need to be dispatched to a "possible burglary in progress" as that is what it was perceived to be at the time of the call. Once investigated, it may turn out to be "unfounded" as far as being a real burglary, but it is not "unfounded" as far as being a "BURG DP" to which a quick response was required.

This understanding is relevant because CAD is often misunderstood and confused with Records Management Systems (RMS) used by police, fire and EMS agencies. In most agencies, there is a definite linkage between CAD and RMS, but they are not the same thing.

Quite simply, CAD is usually used as the "starting point" for a record in the agency's RMS. This means that the "closed CAD event" (once it is all done being responded to) is "dumped" into the RMS and forms the "header information" onto which the police, fire or EMS responders will append their often numerous, sometimes highly confidential and usually lengthy follow up reports and related materials.

This linkage relationship between CAD and RMS is very important, and it is assumed that the linkage between "BRAND A CAD" and "BRAND Z RMS" is uniquely developed for this combination, while the linkage (interface protocol and software) between BRAND B CAD and BRAND X RMS is different and can't be assumed to also interface properly to BRAND C RMS.

Today the City of Atlanta police and fire PSAPs use the same CAD system, provided by a software firm called **PSSI,** interfaced to the PSSI police RMS and the "EMBRS" fire RMS. Fulton County uses a CAD system provided by **InterAct Public Safety Systems** which interfaces to a separate **Intergraph** County Police RMS and a County Fire RMS provided by **Firehouse**. Grady EMS uses yet another CAD system, provided by **TriTech**.

Each of these different CAD and RMS systems are closely woven into the operational fabric of their user organizations and any change from one system to another by any of the participants can be presumed to be a ***hugely significant undertaking.***

MOBILE DATA SYSTEMS

Mobile Data Systems (MDS) consist of three main components:

- The device on which the data is manipulated or processed in the field
  - These are either vehicle mounted devices (usually "ruggedized" laptop PCs) or hand held devices like small laptop PCs, and occasionally the size of a PDA type device like a "Palm Pilot"
- The medium over which the device communicates with its "head end"

    - This is either a privately owned and operated wireless system such as a dedicated set of radio channels, or leased access to a publicly subscribed system such as the Sprint, Nextel or Cingular GPRS (among others).
- The "message switch" and "head end" to which these field devices communicate.
    - Through a message switch, data requests and replies can be routed to and from their host computers at the city, county, state or national level.
    - Through a message switch, transactions from a mobile data device (usually a Mobile Date Terminal –MDT – in a car or fire truck) can interact with the above described CAD system.
        - This can be a very valuable tool. It can mean that field units can display the full CAD event record for the incident they are responding to or handling and get all the details, without having to tie up the radio dispatcher's time reading it all over the air. It can also mean that field responders (usually police) can peruse "pending CAD events" for events close to them and they can help (or hinder) the dispatcher's logical assignment of pending events for expeditious processing. It can also mean that responding units can "arrive themselves" on an event, automatically updating the CAD record (for all to see), as well as close the event out and add the final clarifying free-text remarks to that CAD event record, all of which saves radio air time and dispatcher time.
        - These MDTs can also be used for relatively secure text messaging between field units (if permitted) and between field units and dispatchers (if permitted), all in the interest of saving clock time and radio system air time.
        - These MDTs can also be used for field data inquires. Many law enforcement agencies have been able to eliminate dispatch positions (or avoid having to add them) by employing MDTs and having field personnel run many to all of their car license checks, driver's license checks, stolen vehicle checks, etc. over their MDTs, as opposed to being served by a dispatcher in the PSAP.
    - MDTs are in place in many to most Atlanta PD and FR units, and Fulton County Police and Fire units, and while their basic configuration is the same, they are totally separate and non-interconnected mobile data systems. Both are operating on proprietary Motorola rd/LAP 800 MHz data radio systems.

3. TWO-WAY RADIO SYSTEMS AND ISSUES

Probably the single most important technology in any public safety agency is its two-way radio system. The central focus of this system is that agency's PSAP. The PSAP dispatchers use the two-way radio system to voice dispatch responder units to calls-for-service, and the response units use it to report to the dispatchers and to communicate and coordinate among themselves.

Atlanta and Fulton County have been exceptionally fortunate in the fact that for over a decade now, they have both been served by essentially state-of the art two-way radio systems. Flowing largely from planning for the 1996 Olympics, both agencies have

implemented a technology known as **TRUNKED RADIO**. Both systems, while totally separate from each other, were provided by Motorola. Both systems operate in the same segment of the 800 MHz portion of the radio spectrum.

And, importantly, both systems have the ability to intercommunicate directly with each other. The level of inter-agency communications capabilities that exist between Fulton County and the City of Atlanta is almost unprecedented in major urban city-county pairs in the USA. Furthermore, the radio systems in place serve not only the public safety agencies of the City and County government, they also serve the "public service/public works" agencies of those same governments.

THIS IS TRULY AN ENVIABLE SITUATION.

Having said all of this, however, there are a number of major initiatives underway from both a technical and a regulatory perspective that will impact these two radio systems. Some of these are:

- Planned technical obsolescence to major system components and their projected loss of support by the manufacturer.
- Mandated "re-banding" (relocation within the spectrum) necessitated by interference coming from Nextel systems.
- Migration to digital and standards based modulation schemes (both the City and County use analog, "closed" -- proprietary systems today).
- The implementation (using federal UASI funds) of a radio inter-operability "overlay" network throughout the greater Atlanta metro area, which uses standards compliant digital modulation, resulting in a technology migration path already having been set for the city and county radio systems going forward.

Importantly, while it is highly likely that some radio system migration activities and upgrades on the separate city and county systems would probably be a good idea *(perhaps concurrent with any system modification or re-alignments required to support a merged City-County PSAP),* we feel that it is critical that any such upgrades or technology migrations not be thought of as a cost related to, caused by or dependent on any PSAP merger. Simply put, these upgrade/migration activities may or may not be needed, and may or may not take place, **100% WITHOUT regard to whether or not there is a PSAP merger between the City and the County**, and the two issues should not be co-mingled, at least from a cost assessment perspective.

4. PERSONNEL ISSUES (HIGH LEVEL)

Thus far our background discussions have dealt with jurisdictional history and technology issues. Trumping all of them in terms of importance are the personnel or human resources involved in the delivery of emergency communications services and their significant issues and opportunities.

Over the long run, personnel are the largest single cost factor, by far, of operating 911 dispatch systems and centers. They usually consume close to 90% of the recurring annual costs.

Historically, the jobs involved in a 911 PSAP are relatively new. Before the 1960's, almost everyone who answered a telephone or talked on an antiquated dispatch two way radio in the police or fire world was a police officer, deputy sheriff or firefighter. As the costs of these public safety officers got higher and higher, and as the specific skill requirements for dispatcher staff got more demanding (the ability to be a competent typist for CAD was chief among them), agencies tended to migrate shift working positions from sworn to civilian. Now, civilian shift worker staff is the virtual norm in the public safety communications field.

The role of shift supervision and overall management of dispatch centers has not migrated to civilianization nearly as completely. In many public safety agencies with their own PSAPs, "command" of the PSAP is assigned to a ranking sworn/commissioned officer in the organization. Often they are on rotational, career development assignments, and they "pull their tour in dispatch" in order to get a well rounded overview of the entire department. Sometimes they are assigned to the PSAP as a "retirement job" or as a disciplinary posting. Sometimes they are career public safety persons who are communications professionals who also happen to have achieved rank within the department.

Unlike police, fire or sheriff's departments who operate their own PSAPs (as many to most do) the newer type of "service neutral PSAPs" (like Fulton County) or "independent PSAPs" (which are governed by a shared power board, like Minneapolis) tend not to have sworn personnel in any positions. One of the obvious reasons behind this is the issue of "What type of sworn person should it be?" Can a Fire Battalion Chief in charge of communications be the boss of civilian Police Dispatchers? Can civilian Fire Dispatchers have as their boss a Police Captain? And what about Sheriff's personnel, where would they fit in?

And, as it relates to shift supervision, does it make sense to have one POLICE **or** FIRE supervisor on duty trying to supervise not only those activities his role in his department suits him for, but also activities of the "other department" about which his expertise may be more limited? If not, and one chooses to have one supervisor on the shift of each type, how then do they effectively "team-supervise" cross service trained and deployed radio dispatch and 911 call taker staff? And if the decision is that they can't and that one really needs a set of police call takers, and a set of fire call takers, and a set of police radio dispatchers and a set of fire and/or EMS radio dispatchers on each shift, and they each need their own supervision for their specialty on their shift, ***why was there a PSAP merger in the first place***?

These neutral or quasi-independent PSAPs tend to have 100% civilian management, supervision and working staff. This is not to say that these civilian communications managers haven't often come from the ranks of former sworn police managers or fire commissioned managers, but even this is becoming more rare, as a growing cadre of 15 – 20 year experienced career civilian emergency communications professional managers has developed and many of these jobs are going to them.

Between the City of Atlanta's two PSAPs and Fulton County's one PSAP approximately 276 persons are employed in PSAP roles ranging from support staff to 911 call takers to radio dispatchers to shift supervisors to unit managers and executives. These 276 persons cost nearly $16 million per year in salaries and fringe benefits, for an average total cost (including all fringes) of $57,000 per employee per year. In terms of actual salaries, they range from as low as around $25,000 per year for a 911 operator or office support staff up to over $120,000 for executive positions.

SECTION 2: ISSUES IDENTIFICATION REGARDING POTENTIAL PSAP MERGER

We have identified seven major issues around which we think the potential of merging the PSAP operations of the City and the County should evaluated. They are:

1. **THE ISSUE OF HUMAN RESOURCES AND THEIR COSTS AND EFFICIENCIES**

   1.1. Can the emergency communications mission and responsibilities of the two entities be done using fewer people at a lower cost if merged than if kept separate?

   1.1.1. Does the amount of potential cost savings justify the work and stress the measures required to achieve them will exact?

   1.2. Can an equitable and workable mechanism be developed for the integration of the two separate work forces into one work force?

   1.3. Can an equitable and acceptable mechanism be developed for the outplacement of surplus staff?

2. **THE ISSUE OF PROCESS EFFICIENCY AND EFFECTIVENESS**

   2.1. Can the emergency communications mission and responsibility of the two entities be done better from a user/customer service and outcome perspective?

   2.2. Can field operations of the public safety agencies of the two entities be better coordinated by the merger of their PSAPs?

3. **THE ISSUE OF PROCEDURAL COMMONALITY**

   3.1. Can common operational procedures and the technologies required to support them be developed/implemented by the two entities?

4. **THE ISSUE OF FUTURE TECHNOLOGY INVESTMENTS**

   4.1. Can investments in future technology upgrades, migrations and implementations be made more efficient and less costly per entity, if done from a shared PSAP platform?

5. **THE ISSUE OF GOVERNANCE**

   5.1. Can an acceptable governance model be developed for the overall control and operational management of a merged PSAP?

6. **THE ISSUE OF THE "ECONOMIC MODEL"**

   6.1. Can an acceptable, equitable and feasible economic model be implemented for a merged PSAP to reflect expenditures and revenues?

7. **THE ISSUE OF TECHNOLOGY AND/OR FACILITY HURDLES**

   7.1. Are there technology or facility hurdles which must be overcome before such a merger could happen?

   7.2. Can said issues be resolved in time for other pressing timeline concerns?

We will deal with each of these issues in the above order on the following pages.

1. THE ISSUE OF HUMAN RESOURCES AND THEIR COSTS AND EFFICIENCIES.

As was established earlier, some 281 positions are budgeted today for the delivery of emergency communications services in the two jurisdictions at a cost of nearly $16,000,000 per year.

Can this work be done with fewer staff?

In a word, yes. But it is important that this be justified and explained in terms of an analysis of the workload.

Developing data on the true workload in any two PSAPs is always a challenge, and the City of Atlanta and Fulton County have been no exception to that experience. No two PSAP agencies ever count exactly the same activities in the exactly the same way. But it is a fact that if the two (or three) PSAPs were to merge, the workload currently being handled by each of them would either have to be handled at the merged PSAP, or be disposed of in some other fashion.

This last statement is worth some explanation. Today, the Atlanta Fire-Rescue PSAP answers about 120,000 telephone calls per year. Of these, nearly 70,000 are dialed directly to the AFR's seven-digit number and 50,000 are 911 calls transferred from the Police PSAP. Clearly, the 50,000 calls on 911 that the APD PSAP transfers to the AFR PSAP were also initially answered at the APD PSAP. If there is a merger of the APD PSAP and the AFR PSAP, and if these 50,000 calls are no longer going to be transferred from one operator to another, then the call answering workload represented the AFR function would go down by 50,000. This is what we mean when we say, "Disposed of."

Similarly, some portion (no breakout was provided) of the grand total 1,288,950 phone calls answered in the APD PSAP in the period March, 2004 through February, 2005 were calls that were transferred to and/or handled by the several Tele-Serv (Telephone crime reporting unit) staff employed in the APD PSAP. If this Tele-Serv function were to not be a part of a merged PSAP (and there is an argument that it should not be a part of a merged PSAP), then whatever number of calls they are handling on whatever 7 digit number they were received would be "disposed of" and not have to be answered at a merged PSAP.

The table on the following page presents telephone call activity at the Atlanta PD and FR PSAPs for the above referenced 12 month period. The table on the page after that represents a compilation of all workload activity for the City and County 911 PSAPs.

City of Atlanta Police & Fire PSAPs: 12 month telephone activity

	# Calls answ. thru APD's ACD regardless of 911 or 10 digit origination	# Calls abandoned in APD ACD before answered	# calls dialed to APD TDD line	# calls answ direct on AFR "3333' line	# "3333" calls abandon before AFR answered	# calls answ direct by APD on "3434" line	# "3434" calls abandon before APD answered	Total ALL CALLS PRESENTED
March, 2004	95,974	1,693	33	5,913	46	14,793	2,585	121,037
April, 2004	92,650	2,065	29	5,405	47	14,163	2,605	116,964
May, 2004	97,843	4,770	35	5,778	50	13,506	2,805	124,787
June, 2004	98,597	3,539	34	5,923	50	14,049	2,146	124,338
July, 2004	101,310	2,316	43	5,964	52	13,157	2,705	125,547
August, 2004	96,222	2,605	34	5,498	43	13,879	2,539	120,820
September, 2004	102,389	1,838	37	7,157	118	13,486	2,677	127,702
October, 2004	97,085	1,336	13	5,504	43	13,092	2,470	119,543
November, 2004	88,684	1,140	-	5,313	41	12,213	2,443	109,834
December, 2004	89,094	1,038	-	5,586	48	12,175	2,410	110,351
January, 2005	89,022	1,938	-	6,556	53	13,269	2,313	113,151
February, 2005	80,008	1,231	-	5,047	42	12,032	2,204	100,564
12 mo. totals:	**1,128,878**	**25,509**	**258**	**69,644**	**633**	**159,814**	**29,902**	**1,414,638**

Note: TDD (**T**eletype **D**evice for the **D**eaf) did not capture numbers for November to February

Analysis of Workload Factors

City of Atlanta 911 (PD and FD separate) and Fulton County 911

Activity	Atlanta PD	Atlanta Fire-Rescue	Fulton County 911	Total	Comments
Inbound phone calls	1,344,103	50,000	812,047	**2,206,150**	Not counting AFR 911 calls as they would be a "double count" since each of those calls had already been answered in APD before being transferred to AFR and in a merged center, such transfers may not be required.
GCIC Checks done at dispatch positions	Sometimes done, but no numbers provided	Not applicable	103,460	**103,460+++**	For APD, this should be trackable by POSITION # in the CAD system which is interfaced to GCIC.
CAD Total events created	778,581	49,503	423,062	**1,251,146**	See below
CAD Events radio dispatched to responders	410,413	49,503	280,466	**740,382**	This number is smaller than the above number due to numerous CAD events being created for the purpose of assigning a Case Number, but no field units were sent.

The APD 911 Operators averaged **84 second call duration times** for the calls they answered, with an average of **6 seconds of ring time per call**, spread out over the 1,128,878 ACD based calls they answered.

The AFR operators averaged **49 second call duration times** on the 69,644 calls they answered on their "3333" lines.

The Fulton County 911 operators averaged **93 second call duration times** on the 812,047 calls they answered through their ACD, with an average of **3 seconds ring time per call**.

In staffing any two stage PSAP one needs to identify three basic work tasks and the number of persons who will be required to perform those tasks on the "operations side" of the PSAP, along with the required support staff. These three basic operational work tasks are:

- Answering incoming phone calls
- Radio dispatching police, fire or EMS
- Providing on-the-scene supervision to the above

There is a significant difference in the way one determines staffing needed for the phone answering versus the radio dispatching work tasks. On the radio dispatching side, this is often dictated by the decision about how many "radio zones" the dispatched police agencies choose to deploy. For example, today the Atlanta Police operate and provide dispatch staff for six geographic police patrol zones for 24 hours of every day. This means each of six dispatchers is handling one of six patrol zones and all the activity in them and all the police units working within them. Additionally, they staff a Detective radio position, a Tactical radio position, a Special Operations Group (SOG) radio position and an Atlanta Crime Information Center (ACIC) radio position. This totals ten staffed radio dispatcher workstations, which if operated 24 x 7 would mean that either ten persons would be required on each shift, assuming these staff were either provided break relief by Supervisors or relieved each other with one workstation position assuming the duties of two of the above roles while the other person was out on break.

At Fulton County 911, they staff two zone police workstations (North County and South County) per shift, one EMS position, one fire position, one Sheriff's position and one Marshal's position (day shift, weekdays only) for a total of six staffed radio dispatcher workstations during a weekday day shift.

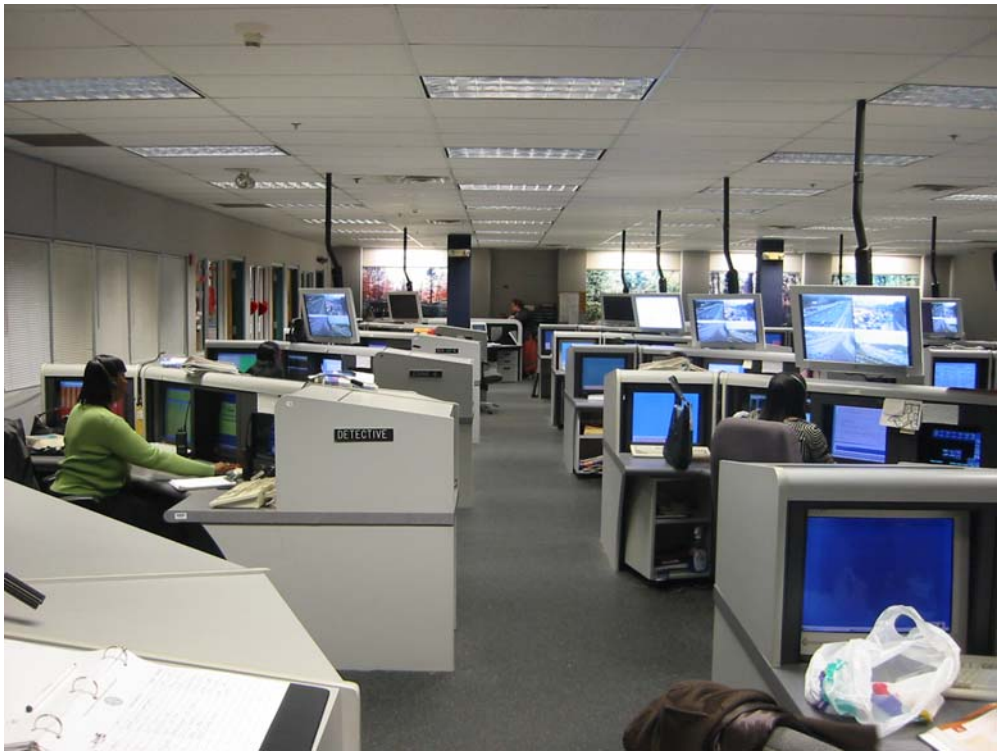
Based on the above, we can see **that if the two POLICE DISPATCHING operations chose to continue to staff "dispatch zones" or "functions" as they are now staffed,** there would need to be 16 day time positions staffed plus either enough built in relief to provide breaks and not have to merge any positions during breaks, or adequate supervisors to handle breaks. By dropping the County Marshal workstation position during off hours, the requirement would drop to 15 workstations to staff.

Operating under the assumption that the police dispatching operational configurations in a merged PSAP would probably stay about as they are today, it turns out that very little increased personnel efficiency would be gained in the staff needed to deliver just police radio dispatching, since there is no likely reduction of the number of workstations to be staffed at any given time.

However, if certain changes in police radio functional organization for dispatch were considered acceptable, it might be possible to merge some functional workstations such as Marshal, Sheriff, Detective, Tactical, and SOG into fewer than five workstations.

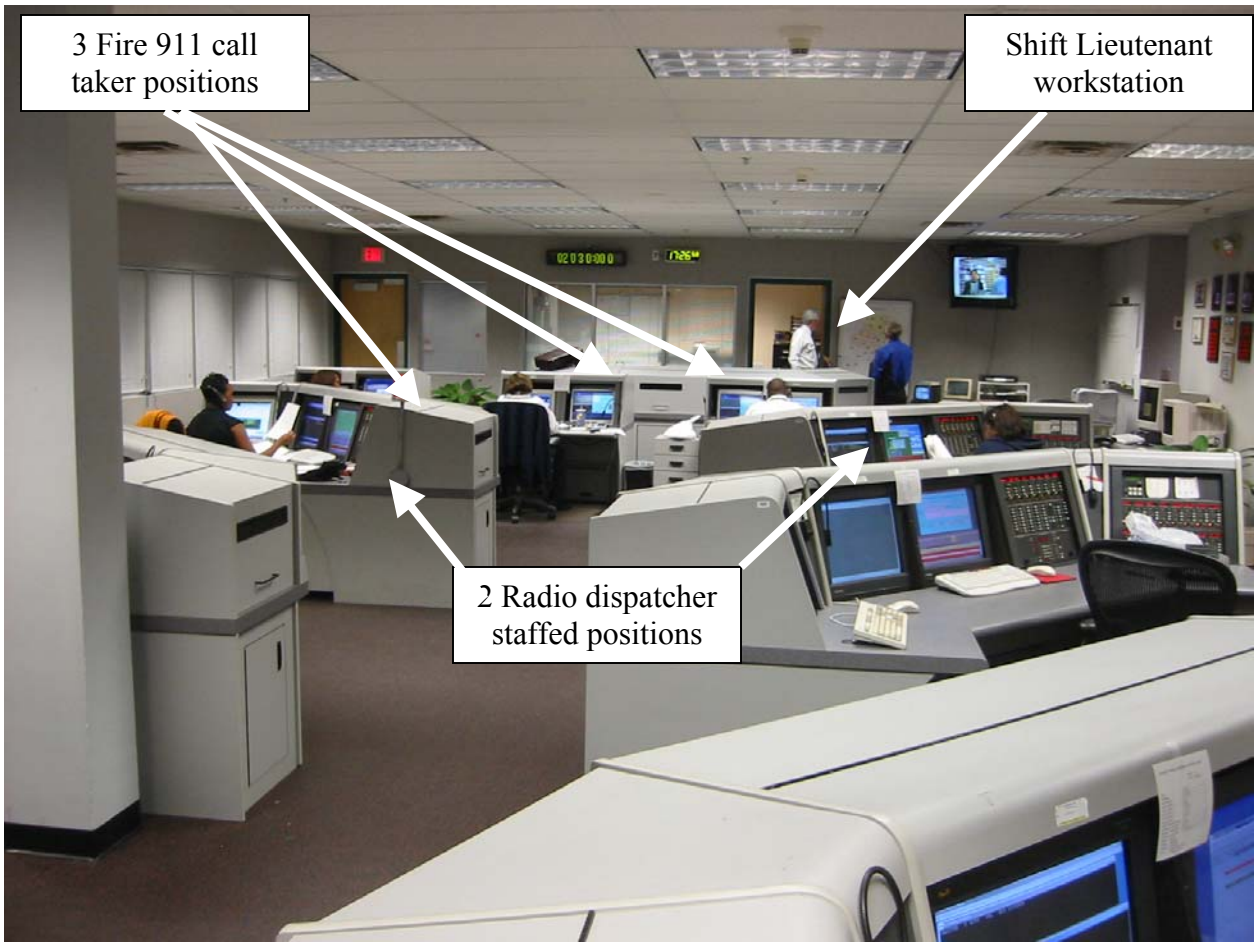
As for fire radio dispatching, the Atlanta Fire-Rescue PSAP staffs two radio positions, with one handling all call assignments, and the other handling all on-scene fire communications. It does seem reasonable to assume that the number of workstations to handle dispatching for Atlanta Fire-Rescue, County Fire, and Rural Metro EMS could be reduced from today's four into three or two.

Below: Atlanta Police PSAP showing two rows of police radio dispatch workstations



Below: Fulton Co. 911 PSAP showing several of the police & EMS radio dispatch workstations:

Atlanta Fire-Rescue PSAP showing two staffed radio dispatch positions, and three staffed 911 call taker positions. The Shift Supervisor (Fire Lieutenant) sits at the front of the room.



Having established that the number of "radio dispatcher chairs" that would likely need to be filled on any given 8 hour shift are:

Police: 16 days, 15 other times for an average of 15.25
Fire: 3 for 24 hours per day

We can now move on to determining how many staff would be required to fill those chairs.

Filling 18.25 police & fire dispatcher positions on each shift x 3 shifts per day = 54.75 shifts per day that need staffing. 54.75 x 365.25 days per year (avg.) = 19,997.44 radio dispatcher shifts needing staffing. 17,428.75 x 8 hours per shift = 159,979.52 person hours required to fill those shifts.

We then start with the assumption that each full time employee is eligible to be scheduled for 2,080 hours of work per year. But there is much time that must be subtracted from this 2,080 hours to reflect the real world, like vacation, sick leave (almost always way high in PSAPs), in-

service training, and in-shift breaks. Our experience tells us these average deductions are appropriate:

Start:	2,080 hours
Subtract for vacation	- 96 (average of 2.5 weeks)
Subtract for sick leave	- 96 (average of 12 days per person per year)
Subtract for in-service trng.	- 24 (average of three 8 hour days per person/yr)
Subtract for shift breaks	- 175 (3/4 hour per each of 233 eight hr. shifts/yr)

Net available workstation assignable time: 1,689 hours per year per full time employee

Dividing our required 159,979.52 person hours to fill the chairs at all of the radio workstation positions in a year by the above 1,689 available hours per person, we arrive at a total of 94.72 (round to 95) full time equivalent radio dispatcher positions being needed.

As mentioned earlier, the determination of how many radio dispatch workstations one needs to have staffed is not a direct function of how busy it is, or how much work there is to do. It is more a function of how many discrete radio functions one wants to be able to operate. It is not unlike cashiers at a supermarket. If the supermarket company has a policy that the supermarket will always have six cashier-checkout lanes open, then there will need to be six cashiers (plus people to relieve them) on duty at all times, regardless of how busy it might be. Based on this, this number of 95 required radio dispatcher positions is somewhat to significantly discretionary. And, to the degree that one could merge, close or otherwise re-configure some of the non call handling, patrol zone based radio positions (such as Marshal, Sheriff, Tactical, Detective, etc), one could reduce this number of 95 significantly. For example, if one could reduce the need for just one of these "other-type radio dispatch workstations" on every shift of the year (not staffing, for example, a Detective radio position on the night shift), one could save 2,920 "position hours" which is the equivalent of 1.73 dispatcher positions. For this reason, we are projecting that up to 12 dispatcher positions could be saved by effectively closing down certain positions at certain times of the day and merging their function (if needed at all) with another position. This would result in a total of 83 radio dispatcher positions being needed in a merged PSAP.

Related to this discussion is the question of equal shift sizes. If one always expects to staff the same number of radio positions on every shift of every day of the year (regardless of the obvious changes in workload by time of day, day of week and time of year) then one would always schedule the same number of dispatchers for every shift. We are much more favorably inclined to an activity data driven scheduling process that matches the number of radio positions being staffed with the workload. Under such a system, it would not be uncommon to see as many as 8 patrol zone, call-assigning police radio positions during peak periods, and then having that reduced to as few as 5 or 6 during very slow periods, in the early morning, for example.

Determining how many telephone call takers are needed at any one time, on the other hand, is a far different proposition. Here the issues regarding call volume (how busy it is), call duration (how much time it takes to process each call) and call fluctuations throughout the day, month and year can and should all come into play.

Earlier we established that a merged Atlanta – Fulton County consolidated police-fire PSAP could receive about 2,206,150 phone calls per year. But we need to adjust that downward slightly. As it stands now, that number represents all calls into the APD 911 unit, all calls direct into the AFR comm. center and all calls direct into the County 911 unit. However, some portion of those calls being answered at the County 911 unit had already been answered at the APD 911 unit and were then transferred to the County 911 unit and would have resulted in a double count in the above number. Absent specific numbers to the contrary, we are going to assume that about 12% of all phone calls answered at APD 911 are for fire or EMS, and that about half (a total of 6%) of them are for EMS and have been transferred to the County 911 unit. That would mean that 6% of 1,344,103 calls answered by APD 911 (80,647) will be subtracted from the above 2,206,150 figure as they would no longer have to be transferred in a merged PSAP. Therefore the new total phone call number we will use for projecting staff requirements will be 2,125,503.

Further, the ACD data from both the APD and the County showed us that the city had 84 second call duration times and the county had 93 second call duration times. It is assumed that a factor in the County's longer call duration times are due to two factors: First, the fact that on some of those calls, they are doing EMD at the County, and that can lengthen the call processing time significantly. Secondly, by using their "tiered" Call Screener and Call Taker ACD roles, the County is able to afford the Call Taker (the one not answering the in-coming "hot" 911 calls) the relative "luxury" of taking a little more time on their calls, as they are not under constant pressure to clear their calls because 911 calls are waiting to be answered. They are usually being answered by the Call Screeners.

Based on the above issues and differences, it is not possible to come up with a specific or weighted average time we expect calls into a merged PSAP to require, but it seems safe to assume that the average call duration times in a merged PSAP will be about the simple average of these two numbers, or 88.5 seconds each.

If there are 2,125,503 calls to answer, and their average duration is 88.5 seconds, that means that 188,107,015 seconds or 3,135,117 minutes, or 52,252 hours would be required just to talk to these callers.

Beyond just talking to the callers, there is almost always some time required after the conclusion of the call for completing the details of the CAD event, adding more detailed remarks, etc. and our experience in examining this sort of data tells us that an assumption of 30 seconds per call is reasonable. Therefore, these 30 seconds per call, times the 2,125,503 calls answered would amount to another 17,713 hours spent in this activity.

Consequently, between the above two call taking/processing activities, we have determined that a total 69,965 person hours would be required to answer and process 2,125,503 calls, leaving no margin for error resulting from call surges, weather events, etc.

Returning to our earlier math showing that the average full time employee was deployable in at workstation for 1,689 hours per year, we see that 41.43 full time equivalent call takers would be deployable at workstations for 69,975 hours per year. This averages out to just under 8 call takers sitting in chairs at any one moment.

These projected numbers, represent only working positions and not supervisory or management positions (41.43 call takers + 82.55 radio dispatchers = 123.98) and are dramatically lower than the current staffing level at just the Atlanta PD 911 center. Having arrived at this calculation we checked with some other 911 PSAPs in major urban centers, and found the following staff to service population comparisons: (Note "ECC" below means consolidated PD/FD PSAP)

PSAP	# of FTE Staff	Service Pop.	Ratio staff to service pop.
San Diego CA PD	140	1,230,000	1: 8,785
Sedgwick Co. KS ECC (Wichita)	65	450,000	1: 6,923
Columbus, Ohio PD	118	632,910	1: 5,364
Detroit, MI PD	190	995,000	1: 5,236
Portland OR ECC	127	670,000	1: 5,276
Fresno CA PD	83	427,652	1: 5,152
AVERAGE			**1: 5,031**
Kansas City, MO PD	91	428,000	1: 4,703
Pittsburgh, PA ECC (pre merger)	72	334,563	1: 4,647
Oakland CA PD	89	400,000	1: 4,494
Minneapolis, MN ECC	85	382,000	1: 4,494
Sarasota Co. FL ECC	110	465,000	1: 4,227
Long Beach CA PD & FD	93	461,000	1: 4,057
Mesa, AZ PD (Metro Phoenix)	125	475,000	1: 3,800
Proposed Fulton-Atlanta PSAP	175	655,019	1: 3,742
Metro Nashville ECC	183	600,000	1: 3,279
Atlanta PD (Current)	152	423,019	1: 2,783
Fulton County ECC (Current)	86	232,000*	1: 2,698
Atlanta PD + FD (Planned merge)	180	423,019	1: 2,350

(*) Also handles about 100,000 transferred calls for EMS within Atlanta, as well as some transferred calls from non primary service areas for fire and EMS dispatch, so the population to which some form of 911 service is provided is likely higher than this 232,000 primary service population.

Frankly, we think a 911 call taker allotment of 41.43 is too low for a major metropolitan community such as Atlanta. While many of the above communities are as large as or larger than Atlanta in census population, we think that the drawing power of the City of Atlanta, especially during the work day, argues for a larger call taker contingent. We can't precisely calculate or predict what that number should be, but we think that a "day one" staffing number in a merged PSAP should be something around 11 call taker chairs filled, on average, 24 hours per day. This would require 94,448 person hours, which would result (at the 1,689 deployable hours per FTE) in needing 55.91 FTE persons (round to 56) for the call taking role.

We have now identified the need for a total of 139 (83 + 56) shift based workers in the call taking and radio dispatch role. Undecided at this point is the job classification structure for these 139 positions.

There are two major issues under this question:

A. Should it be a unified job class wherein all employees are of the same basic class (perhaps with grades for seniority, demonstrated competence, etc.) and all can be expected to do all the job tasks? These job tasks would be:
    a. Answering and processing police, fire and EMS phone calls
        i. This would implicitly mean trained in the EMD role.
    b. Performing law enforcement zone and special dispatching
    c. Performing fire-rescue dispatching
    d. Performing EMS dispatching
    e. Performing specialized dispatch such as Marshal, Sheriff, & ACIC roles.
B. Should it be two separate job classes, with one doing only "phone call taking work" (call them 9-1-1 Operators, since that's all they'd do) and the other doing radio dispatching?
    a. Under this model, there is the corollary question of whether or not the radio dispatchers should be cross trained, or service specific? Plus there's the complicating question of whether or not cross trained dispatchers would also be "cross-agency trained", meaning would a law enforcement dispatcher be expected to be competent in Atlanta police dispatching, as well as Fulton County Police, Sheriff, Marshal and suburban PD Dispatch? And, would a fire-rescue dispatcher be expected to be competent for all served fire departments?

There are clearly two schools of thought on these questions, and neither model has swept the industry. Both have their strengths and weaknesses. Referring to these two general models as "A' and "B" from above, some of these plus and minus points are:

- Under 'A' one has ultimate flexibility. You have XX persons reporting to duty, and all can do all things so you get to put anybody wherever you want to.

- Under 'A' if you have a sick call you can fill that sick call with anybody, because all are ostensibly equal in their skill sets.

- Under 'A' you have the opportunity to rotate folks through a variety of tasking during their shift, week, month or year, to keep them fresh.

- Under 'A' if a given employee has strengths in one skill over another, you can tend to assign them to their strength area.

- Under 'A' if you have an employee who develops good or acceptable skills in one of the skill sets (911 answering, for example) but just can't get a handle on the other skill set (radio dispatch), you have to eventually let them go, because their job requires that they master all skills of the universal job.

- Under 'B' you recognize the inherent role differences between a 911 call taker and a radio dispatcher a you can keep people where their skills are more appropriate.

- Under 'B' you can usually pay one position somewhat less than the other and save money. Most agencies treat 911 call taking as the "entry level" position, and then promote interested 911 operators to be dispatchers, if they show the skill and potential.

- Under 'B' you can save money by only having to train and re-certify those 56 or so 911 call takers in EMD, rather than having to train everyone.

While it is a close call, we think the flexibility provided by the "A' model wins this discussion, and we would recommend that a merged PSAP adopt the "universal employee" model rather than the two separate job classes.

In addition to these 139 "universal emergency communicator" positions, the PSAP will also need shift supervision, shift management, operations management, EMD Quality Control, technical management, training management, clerical support, and executive direction.

For each of the three shifts we see the need for 6 Shift Supervisors on each of the three shifts. Six such persons on each shift would be deployable for 10,134 hours per year. There are 2,923 hours of each shift per year. Therefore, six Shift Supervisors would provide for an average of 3.46 on duty at any one time. We are partial to an active role for these Shift Supervisors in employee evaluations, performance monitoring (especially EMD quality control monitoring), coaching and training, and given the fact that there could be 20-25 "universal emergency communicators" on duty in the PSAP at any one time, 3.46 Supervisors to 25 workers seems appropriate.

For each of the three shifts we would also suggest a Shift Manager and an Assistant Shift Manager. These individuals are more "time slot oriented" than day to day work task oriented. In other words, this two person team would "own their shift" and all that happens on it.. They could irregularly perform "on the PSAP floor" hands on supervision, but more of their time would be in employee development, training, procedural development and higher level operational matters. In total, this would amount to 3 Shift Managers and 3 Assistant Shift Managers.

Above the Shift Managers, we see the need for an Operations Manager (Assistant Director) position. This would be the 2nd highest ranking position in the organization.

We also see the need for "specialty portfolios" in the areas of technology and training. For these roles, we favor the concept of assigning persons of the rank of Shift Manager and/or Assistant Shift Manager to these specialty roles for career development purposes. We prefer it when these positions serve at the pleasure of the Director. We think there needs to be a Technology Manager and an Assistant and a Training Manager and an Assistant, with the opportunity to deploy non-ranked persons as trainers or coaches when new hire training is underway.

We see the need for an active and aggressive EMD (and other activity) Quality Control monitoring program with a Manager and two Analyst positions.

We see the need for not less than three administrative staff to handle payroll, budget, filing, etc. in what we perceive to be a relatively independent organization without specific "umbilical cords" to any of today's existing public safety entities.

We see the need for one Executive Director over the entire operation.

A open question exists regarding the Atlanta Police Department's Tele-serve role and the staff assigned to it. We have some considerable experience with such positions and are of a split mind on whether or not they belong inside a dedicated Emergency Communications operation. On the one hand, the PSAP is agency that most wants and needs an **effective** telephone reporting unit to which they can send calls and not have to dispatch scarce field police resources. And, have the calls they send there be promptly and properly handled to reduce or eliminate call-backs from disgruntled callers waiting to get their police report filed. And (some would argue) the best way to ensure this is to have the Tele-Serv unit be under the direct control of the PSAP. But, at its heart, the tele-serve role is significantly different from the emergency communicator role, and largely single department specific, since it deals directly with the RMS for a given department.

On balance, we think that Tele-Serv should not be a part of the merged PSAP's table of organization. It should be in the Records Division of the affected police department.

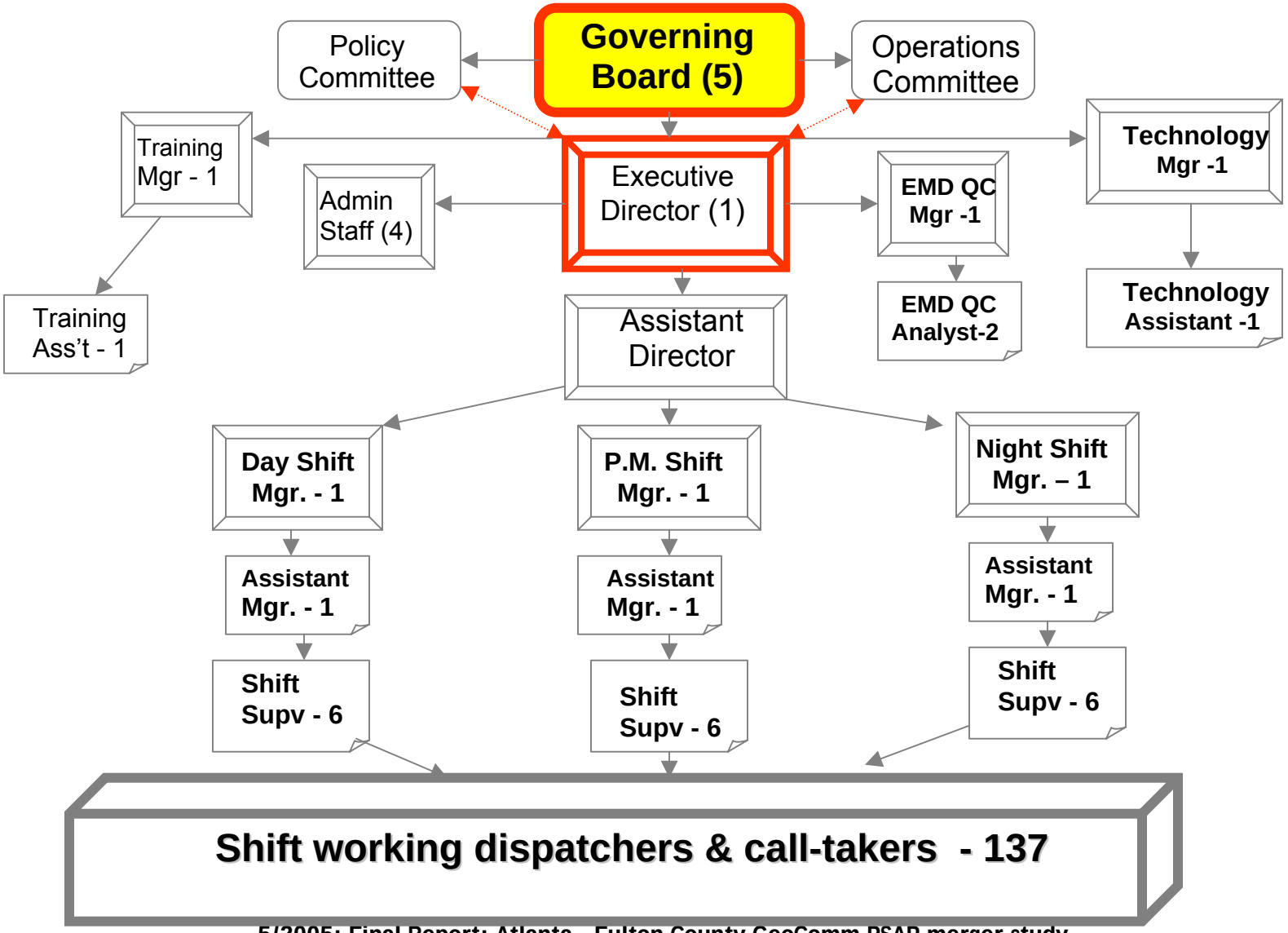
Sworn vs. Civilian: We have left for the last the often "hot button" question of whether or not there should be any sworn presence in a merged PSAP, and, if so, what kind of presence.

Frankly, we think that when one has a multi-service, multi-jurisdictional PSAP the question of having "sworn presence", be it ***supervisory*** or ***advisory*** gets very dicey. What kind of sworn person is acceptable to all sides? Would every agency accept, for example, a County Marshal as the "sworn presence"? Probably not. Who would they accept? Does said "sworn presence" on all shifts on all days have to be from the same department? Is it a rotational assignment? Are they screened for their interests in and/or compatibilities with the PSAP role? And to make it even more complex, does a sworn law enforcement officer meet the desires/requirements of the fire service? Or vice-versa?

For these and many other reasons, it is our recommendation and a general practice in all of the independent, multi-agency, multi-jurisdictional PSAPs we are aware of to have no sworn presence, with the exception of the temporary, *incident driven* assignment of ranking individuals to the PSAP for specific incident coordination purposes. For example, the assignment of a Fire Battalion Chief to the PSAP for all multiple alarm fires.

This far we have dealt primarily with the numbers and type of staffing required for a merged PSAP. The model we have developed thus far is a totally civilian work force, with civilian leadership, and which is all universally trained and assignable across the spectrum of tasking in the PSAP.

Overall Table of Organizaton for Atlanta-Fulton Emergency Communications Authority



The next question is: "From where does this staffing come?" With over 250 persons employed in the current PSAP operations, the first choice should be to recruit the workforce for a merged PSAP from the existing City and County emergency communications professionals.

Our envisioned merged PSAP model calls for this level of staffing:

- 139 "Universal Emergency Communicators" (call-takers-radio dispatchers)
- 18 Shift Supervisors (six for each of three basic shifts)
- 3 Assistant Shift Managers (Operations)
- 3 Shift Managers (Operations)
- 2 Assistant Shift Managers (Training & Technology Assistant Managers)
- 2 Shift Managers (Training and Technology Managers)
- 1 Health Program Manager (EMD Quality Control)
- 2 EMD Quality Control Analysts
- 1 Operations Manager (Assistant Director)
- 1 Executive Director
- 4 Administrative/support staff

175 total staff required.

This staff would serve a resident service population of 655,019 at a resulting staff to population ratio of 1:3,742 still the second highest staff to population ratio in the group we examined earlier.

This proposed staffing patters represents a reduction of about 100 positions when compared to the staffing in today's three separate PSAP operations.

Caution: Several of the functions/positions (primarily tele-serve) from the APD are not carried over into the new merged PSAP, and since they will need to exist elsewhere, they can't be counted as position savings under this model.

The significance of a staffing reduction of this magnitude is two-fold:

1. **Major amounts of money will be saved annually**. These specific savings will be developed over the next few pages, and the scope of these savings can go a long way towards making a number of the required technology replacements more affordable.

2. **Major personnel decisions and some negative actions will be required.**

There is no simple, painless way to shed nearly 100 positions over a relatively short time period (measured in less than 2-3 years, probably). First there will need to be a process to determine which 100 or so persons (by this point they become more than just positions) will not become employees of a new, quasi independent merged PSAP agency. This means a process would have to be developed to determine which employees would make the migration, and to execute that process in a transparent, open and competitive manner. Further, it means that both the City and the County need to expect that at least some of these 100 who will not become employees of the

new PSAP will come from the ranks of their employees of today. The City and the County will have to make high level policy decisions on whether or not these persons will be merely laid off, or whether they will be offered other employment by the County or City, and, if so, at what compensation.

We would favor a process under which all current employees who are interested in migrating to the new merged PSAP Authority would apply for posted positions, and then make their case in a competitive process for being selected. We see a process involving a panel representing professionals from both the City and the County (but not with ties to either incumbent PSAP organization) reviewing all applications and their backgrounds and personnel records, and then this panel making recommendations on who to "hire" for which positions to the new Executive Director, who would be the hiring authority.

Somewhat in advance of the above processes will be the need to specifically identify and develop:

- Ownership of the personnel/staffing process (City or County HR?)
- Job descriptions
- Knowledge, skill and ability requirements
- Instruments/processes to assess these KSAs
- Specifics regarding pension participation
    - A possibility would be that the former employer and former pension (City or County) would continue to carry the "migrated" employee for the balance of their career in emergency communications, while new hires after that date would be placed in the one pension determined to be applicable going forward.
- Specifics regarding personnel policy application and carry-overs:
    - What vacation accrual rates would apply?
    - What sick leave and sick leave accrual rates would apply?
    - Which health insurance coverage would apply?
    - What would happen to accrued vacation or sick leave banks of time?
    - Would seniority in the former agency have any role in the merged agency?
- Specifics regarding rates of pay
    - **As a rule of thumb, we would recommend that no job task in the new, merged organization be paid <u>any less than</u> the comparable job task in the old organizations.**

The above processes will undoubtedly range from stressful to painful for both those affected and those implementing the processes. But these are necessary steps if there is the political will to take advantage of the opportunity to save the amount of money available here and to improve the service delivery process in the ways described.

We think that clearly the cost savings, when combined with the service gains, justify these actions. But we cannot over-emphasize the degree to which the resulting process will be gut-wrenching for all involved.

Pay rates:

In an attempt to correlate the positions and the pay rates between the City of Atlanta and Fulton County 911 operations, from which we will then move forward to developing the recommended pay rates for positions in the new merged PSAP organization we have determined the following:

City Position Title	Mid point or * = Actual	County Position Title	Mid point or * = Actual	**New Merged City-County PSAP**
1 Fire Section Chief	$69, 211 *	----------	----------	----------
1 Fire Captain	$62,900 *	----------	----------	----------
3 Fire Lieutenant	$54,486 *	----------	----------	----------
3 Firefighter	$41,606 *	----------	----------	----------
14 Fire Dispatcher	$30,707	----------	----------	----------
1 Police Major	$82,359	1 Dir. Emer. Comm	$122,000 *	1 Director: @ $122,000
----------		1 Assistant Director	$ 95,155	1 Ass't Dir: @ $ 95,155
5 Police Lieutenant	$67,592	1 Comm Opns Mgr	$ 65,461	----------
----------		1 Health Program Mgr	$ 71,238	1 Health Mgr @ $71,238 2 EMD QC & Trng Analysts @$ 47,133
5 Police Officer	$47,120	----------	----------	----------
1 Senior Police Officer	$51,724 *	----------	----------	----------
13 Call taker	$28,916	73 Comm Officer I	$ 37,746	----------
92 Civilian dispatcher	$33,902	xx Comm Officer II	$ 42,460	139 Dispatch @ $42,460
27 Senior dispatcher	$35,708	6 Comm Ass't Supv.	$ 47,133	18 Shift Supv @ $47,133
1 Civilian Com Mgr	$51,911	6 Comm Supervisors	$ 52,685	3 Ast shift mgr@ $52,685
13 Comm. Supv. (Civ)	$40,953	3 Shift Opns Mgrs.	$ 61,140	3 Shift ops mgr@ $61,140
5 Police Office Ass't	$28,943	1 Admin Coord III	$ 71,238	Same @ $71,238
----------		1 Admin Coord II	$ 61,140	Same @ $61,140
----------		1 Admin Coord I	$ 56,818	Same @ $56,818
----------		1 Admin Ass't. II	$ 42,460	Same @ $42,460
1 Training Director	$50,263 *	----------	----------	2 Shift Mgrs @ $61,140 *(Tech & Trng)*
2 Training Assistant	$46,289	----------	----------	2 shift ast mgr @ $52,685 *(Tech & Trng)*
185 (w/o Tele-Serv PRTs)		**96 Total staff**		**175 Total staff**

TOTAL SALARIES:	**$6,888,792**	**$4,295,357**	**$7,933,774**
Fringe additive 39% =	$2,685,628	43% = $1,847,004	43%= $3,411,523
PERSONNEL TOT:	**$9,975.420**	**$6,142,361**	**$11,345,297**

Today's City + County personnel total = $15,717,781/yr.
Merged PSAP personnel total = $11,345.297/yr.

TOTAL ANNUAL SAVINGS: = $ 4,372,484 PER YEAR, OR 27.8% SAVINGS

NOTE: *County salary rates obtained from County Personnel on 5/9/05 are slightly lower than those rates reported to us by County 911 staff on the same date. We used County personnel rates.*

Conclusion: In restating the questions that opened this discussion section, we see the following outcomes:

THE ISSUE OF HUMAN RESOURCES AND THEIR COSTS AND EFFICIENCIES.

Can the emergency communications mission and responsibilities of the two entities be done using fewer people at a lower cost if merged than if kept separate?

Yes. Absolutely.

Does the amount of potential cost savings justify the work and stress the measures required to achieve them will exact?

Yes, absolutely, but do not under-estimate the work and stress involved for all to implement this.

Can an equitable and workable mechanism be developed for the integration of the two separate work forces into one work force?

This remains to be seen, based on policies developed or approved by the County Commissioners and the City Council/Mayor regarding hiring preferences, seniority retention, hiring processes and pay determination. We think we have proposed a system that could work.

Can an equitable and acceptable mechanism be developed for the outplacement of surplus staff?

This remains to be seen, based on policies developed by the County Commissioners and the City Council/Mayor regarding layoffs, bumping, re-assignment, etc.

2. THE ISSUE OF PROCESS EFFICIENCY AND EFFECTIVENESS

At its heart, the most important mission of any emergency communications organization is to answer incoming calls for service in a prompt and effective manner, and to collect from and provide to those callers the necessary information, assignment and coordination of emergency responders so as to increase the potential of a positive outcome for their event. An equal and concurrent mission is to provide timely, efficient and effective communications support to field personnel.

We believe that this mission can be better accomplished in some cases, and accomplished as well in other cases by merging the City of Atlanta and Fulton County 911 dispatch centers.

As it relates to performing the mission at least *as well*, we are not aware of significant deficiencies in the performance of the radio dispatching task in either the Atlanta PD or Fire Rescue dispatch operations. So in that realm, we expect that properly staffed, equipped, deployed, supported, trained and supervised, the persons assigned to the radio dispatch tasking in a merged PSAP will provide those services as well as or better than in the separate PSAPs. We think the chances are good that the coordination service will actually improve, especially on events near the borders between the city and county police jurisdictions, on freeways, and in cases such as the horrific events at the Fulton County Courthouse on March 11, 2005 where the coordination of multiple responders from multiple agencies could occur much more naturally if done from a merged PSAP than from separate PSAPs.

As it relates to call taking, we think that the elimination of the transferring of Medical Emergency calls from within the City of Atlanta for processing elsewhere, and the perceived (and probably actual) delays implicit in such a process will be eliminated and this whole process will flow much more smoothly in a merged PSAP. When properly implemented, "universal call taking" *(single 911 operator takes the call and can and does do everything required by the call to facilitate prompt dispatch of up to three different emergency services)* can be an impressive process. We have seen numerous events where within 20 seconds of the 911 call being answered, a CAD event is created for a Medical Emergency by that one 911 operator, the EMD advice is begun, and the police, fire and EMS responders (if it is an event to which police are programmed to respond, such as a "baby not breathing", for example) are already answering up "ENROUTE" on the two way radio, and responders begin to arrive at the scene within 2-3 minutes. This is how it is all supposed to work for the persons served by 911, and properly organized and tasked, it can work this way often.

Consequently, in restating the original questions here we see the following responses:

THE ISSUE OF PROCESS EFFICIENCY AND EFFECTIVENESS.

Can the emergency communications mission and responsibility of the two entities be done better from a user/customer service and outcome perspective? ***Yes, undoubtedly.***

Can field operations of the public safety agencies of the two entities be better coordinated by the merger of their PSAPs? ***Yes, we believe so.***

3. THE ISSUE OF PROCEDURAL COMMONALITY

Overall, there are two ways to view a PSAP merger. In one way, one takes the functions being performed by today's separate PSAPs and moves them into one facility where the function share a common roof, some common equipment and some common support staff, but the functions themselves continue to be performed as they are in today's separate PSAPs. For example, if in one of the separate PSAPs of today they use the "10 code" on the radio for police, and in the other they do not, under this model, these disparate practices would continue to be the case in the merged PSAP. And clearly, this approach would be most comfortable for the field personnel, since little to nothing would change in their work lives. However, if in this merged PSAP, one plans on using the employees in a "universal role" where each employee is expected to (eventually) be able to do all tasks within the PSAP, then maintaining these idiosyncratic differences in what procedures are employed by each agency will compound the difficulty they will have in becoming adept at all tasks.

Therefore, the ideal would be to have a uniform set of operating procedures (for communications, for sure, and for field responders as much as possible) for all tasks performed for all agencies.

A good example of this would be the issue of whether or not to employ Fulton County's current "Call Screener" vs. "Call Taker" roles. Their data and experience certainly seems to support its beneficial effect on reducing average call ring times. As such, it should probably be deployed as the uniform procedure and process for 911 call answering. If not, one would have to have a bank of "County 911 call taking positions" operating in the County's fashion, and another bank of "City 911 call taking positions" operating in the City's fashion. Such a scenario plays havoc with the concept of more staffing efficiency.

There are many other areas where procedural commonality would be desirable and, perhaps, mandatory for such a merger to work effectively. We would recommend that the cornerstone of developing this procedural commonality would be the development of unified "CAD INCIDENT TYPES" for the merged PSAP. This would mean that for each and every one of perhaps a couple of hundred CAD incident types, there would need to be a meeting of the minds as to how such an incident will be handled and processed from a call taking, response agency determination, prioritization, radio dispatching, and agency response basis. Once mutually agreed upon, these policies and procedures must then be promulgated out to the response agencies so that everyone knows what the rules of process will be for the new merged PSAP.

We are less concerned about the **availability** of technologies required to support such commonality than we are about the process of coming to agreement to use the available technologies to facilitate some procedural agreement. Take, for example, the issue of automatic prioritization of CAD events based on the INCIDENT TYPE selected. Prioritization is the heart of how it is decided what incidents get responded to in what order when there are more things to be done than there are field resources to do them. This is especially true in police, where on a hot summer night there may be dozens to hundreds more events requiring a police response than there are police units available to respond at any particular instant. Consequently, priorities play

a huge role. And, the priority assigned to a given event needs to be based on some uniform, consistent principles. One way is to have CAD automatically assign a priority based on the event type. This means that if the facts being reported to the 911 operator dictate that the incident be assigned the INCIDENT TYPE "assault in progress", and the CAD INCIDENT TYPE development process determined that this is a Priority 1 type incident, (with 0 being highest, 4 being the lowest, for example), then this event will be automatically assigned a Priority of 1. Said priority may or may not be able to be over-ridden by the entering operator, based on nuance or other details specific to this event. So, the question is probably not whether CAD should be able to pre-assign priorities (we have never seen a CAD that can't do this) based on Incident Type, but whether that capability is employed across the board on all Incident Types.

The same could be said for the concept of "digital dispatch". This means that some events may be dispatched to a response unit (usually police) by merely "sending the event" out to the MDT in the police car and not dispatching it over the two way radio. This could be desirable to either reduce congestion on the radio channel, or to keep unintended listeners from hearing what is being said via radio scanners. Of course, if the several police agencies have different MDT capabilities in their cars, and some have interface to the CAD system in use in the PSAP and some do not, then one's ability to implement uniform procedures such as *"always digitally dispatch bank robbery in progress calls"* becomes problematic. ***And one must try and avoid, as much as possible, situations where "for every procedure there is an exception that relates to Agency A, or Agency B, etc."***

So, in restating the question that began this discussion, we see the following results:

> Can common operational procedures and the technologies required to support them be developed/implemented by the two entities?
>
> ***We believe the answer is YES, with special emphasis on the need to develop some commonality in procedures between police and fire as well as between City and County***.

4. THE ISSUE OF FUTURE TECHNOLOGY INVESTMENTS

If there is one sure thing about the future of emergency communications in the Atlanta metro area, it is that there will be significant future technology investments required.

On the horizon are several major technology initiatives what will require significant expenditures. Two of these are:

A. The need to implement upgraded Enhanced 9-1-1 telephony platforms in the PSAP to deal with the "Next Generation of E911" voice call and data delivery. Generically, this is similar to the implementation of internet based telephony as in Voice Over Internet Protocol or VoIP. Simply put, the E911 call delivery networks in use today are vestiges of a bygone era in telephony. The basic network elements and techniques go back to the mid 1950's and the implementation of Direct Distance Dialing (DDD). The concept of routing calls over analog wires requiring connectivity from "Point A" to "Point B" is rapidly declining. Rather, what is gaining favor is the concept of routing a call from one "IP Address" at the initiating device to another known "IP Address" at the destination device over an ever changing network. Such a system and process will require new E911 telephone equipment (Actually it will probably be called N911 for NEW 911 by then) capable of terminating Internet Protocol connectivity. *(Importantly, one should not assume by the use of the term INTERNET that 911 calls would actually be sent over the public Internet which we all use for e-mails, Google searches and the like. Rather, the protocols are similar but not the pathways.)* National standards setting organizations for 911 (NENA for example) are beginning to address such IP capable 911 Customer Premise Equipment (CPE) platforms, and the vendor community is beginning to inch towards such products.

   The bottom line here is that sometime within probably the next 2-3 years, the existing Positron brand E911 equipment at the two PSAPs would need to be replaced. Replacing this equipment at two stand-alone and non-interconnected PSAPs will cost much more than replacing it at one integrated, merged PSAP. About twice as much.

B. The need to upgrade the current 800 MHz trunked radio systems and migrate their operations up to the APCO Project 25 (P25) suite of standards for digital two way radio systems, as well as to integrate the currently separate city and county radio systems into a metro area public safety communications interoperability overlay network. While much of this upgrading will impact primarily on field subscriber radios (mobile and portable radios, of which there are several thousand deployed between the two entities) and field infrastructure components (base station repeaters, receivers, etc.) that are external to the dispatch center, it is also a fact that when one upgrades these infrastructure components, it is necessary to upgrade/replace the dispatcher console control electronics. Today, each of the two PSAPs has separate Console Electronic Banks (CEBs). Replacing these with two separate CEBs in separate PSAPs will cost a lot more than replacing them with one new CEB in one merged PSAP.

An important concept to understand in most of today's communications technologies is the concept of "shared common control". Generally, this means that all major systems (CAD, radio consoles, E911 telephony, ACD, etc.) are designed with a large central control processor in the "back room" and then relatively inexpensive "workstations" at the places where people sit and do the work. To add workstations to a set of back room electronics generally entails only ensuring that those back room electronics have enough physical connection points to match the number of workstations being connected. This means, for example, that if one were to need to acquire 40 call taking workstations for 911 operators, but in two separate and remotely located PSAPs, one would pay at least twice as much for that configuration as one would pay for a 40 workstation configuration driven by one set of common electronics in one merged PSAP.

A hugely significant factor in assessing this specific issue for Atlanta and Fulton County is the fact that the current Atlanta Police and Fire PSAPs, located in the City Hall East facility (former Sears building on Ponce de Leon), are going to have to relocate in the fairly near future. The City apparently has a buyer for this facility and while we have not been provided with a specific date by which the PSAPs would have to be out of the current space, we have been led to believe it is something in the 2007 time frame.

It is virtually axiomatic in this industry that it is not practical or viable for a large PSAP to "turn everything off" on Friday afternoon and plan to move all equipment and people to a new facility with plans to resume operations on Monday morning.

The reasons for this are several:

1. One can't turn off calls to 911.
2. One can re-direct calls to 911, providing there is another PSAP large enough to be staffed up to handle the City's 911 call volume and to provide access to the City's radio system and (probably) its CAD system for the several day period. This is not at all likely when it is the largest and busiest PSAP in the region that is in question. It might be more likely if it was Fulton County that had to relocate, as they could probably remote their CAD and re-route their 911 calls to the Atlanta PSAP and use unused work stations there, but not the other way around.
3. Moving all sorts of not new electronic equipment can be fraught with difficulties.

It is for these reasons that when major PSAPs move, the concept of taking old equipment out of the old PSAP and moving it with them to the new PSAP is rarely seen or done. This means that when the City needs to move its PSAPs or PSAP to a new facility (assuming no commitment to merge is yet in place), it will likely need to invest in all new E911 CPE, ACD equipment, CAD workstations (at a minimum), radio control console workstations, and logging recording capabilities at a minimum. Assuming no merger, none of this investment would benefit the County at all.

On the other hand, if the money that was otherwise going to be spent on a City move only were to, instead, be spent on new equipment for a new merged PSAP, not only would both the city and county get the benefit of new, upgraded technologies, but the money would only have to be spent once.

In re-examining the foundation question for this discussion item we see the following:

> Can investments in future technology upgrades, migrations and implementations be made more efficient and less costly per entity, if done from a shared PSAP platform?
>
> ***Yes. Absolutely.***

5. THE ISSUE OF GOVERNANCE

Can an acceptable governance model be developed for the overall control and operational management of a merged PSAP?

We think it can. But it may not be easy if approached from a typical control model.

This issue becomes somewhat more complicated than some others because it really involves two levels and types of control and operational management. On the one level there is the ***"Which government entity – City or County – owns this operation?"*** governance issue. If it is the City, then the City's rules, the City's powers, the City's procedures, and the City's liability are preeminent On the other hand, if it is the County, then the converse is the case.

But this question misses what we think is the real issue of control and management. Specifically, while today's PSAPs are city or county operations, they are really much more the tools of monitoring, controlling and coordinating the police and fire resources of the city and county. More specifically, any seasoned Police Chief, Fire Chief or Sheriff knows that the ultimate place of control over the day to day activities and operations of his/her department is in that Department's communications center or PSAP. Furthermore, they know that the one place that knows the most about what happened, where it happened, who it happened to, when it happened, who did what to whom when, and how many of them did it, and all sorts of similar questions is the dispatch center. And those persons who work in the dispatch center are the ones who know the most about using these capabilities and this knowledge to recreate and document significant activities.

It has been our experience that when top management and policy makers of cities or counties do not maintain and exercise a degree of control over a PSAP, they lose the ability to apply independent judgment regarding public safety activities. In other words, if control of the PSAP rests with the persons in control of the police or fire departments, then one must go through the persons who control the police or fire departments to get access to information about what the police or fire department did in a given incident.

As the manager of a large independent PSAP serving police, fire and EMS (in Minneapolis), GeoComm's Paul Linnee has personal experience with representatives from the Mayor's Office and the City Council coming to the realization that if they had a constituent complaint and wanted an objective, overall view of what happened when, where, how long it took and what was done by whom, they would call the Emergency Communications Center supervisor or management, and not the police or the fire departments.

All of this factors into the question of how to structure governance for such a merged PSAP operation. And it is from this perspective **that we have come to the position of favoring a PSAP governance body that represents the very highest level of local government control**. Specifically, we favor a top level governing body that represents, at the highest level, the City political leadership and the County political leadership. Usually that would mean the Chair of the Fulton County Commissioners and the Mayor of the City of Atlanta should sit on the governing board. However, because a two person Board could be problematic, and because we would like to see more involvement from the County Board and the City Council, we are suggesting that

four local representatives be on this 911 Authority Board, and for the 5th seat, would like to see person on this board not affilifated with the City or County governments, and several options exist to fill that position:

1. Placing of the Mayor of one of the communities that receive their dispatch services from the County's 911 PSAP today on the Governing Board.
2. The requirement that the four elected Board members appoints a mutually acceptable fifth member from the community.
3. A process whereby the City Council and the County Board elect the fifth member from a list of candidates nominated by the four elected members of the Authority Board (Mayor & Council President and County Board Chair and Commissioner at Large) and that said election be unanimous (with the City Council and the County Commissions each having one block vote).

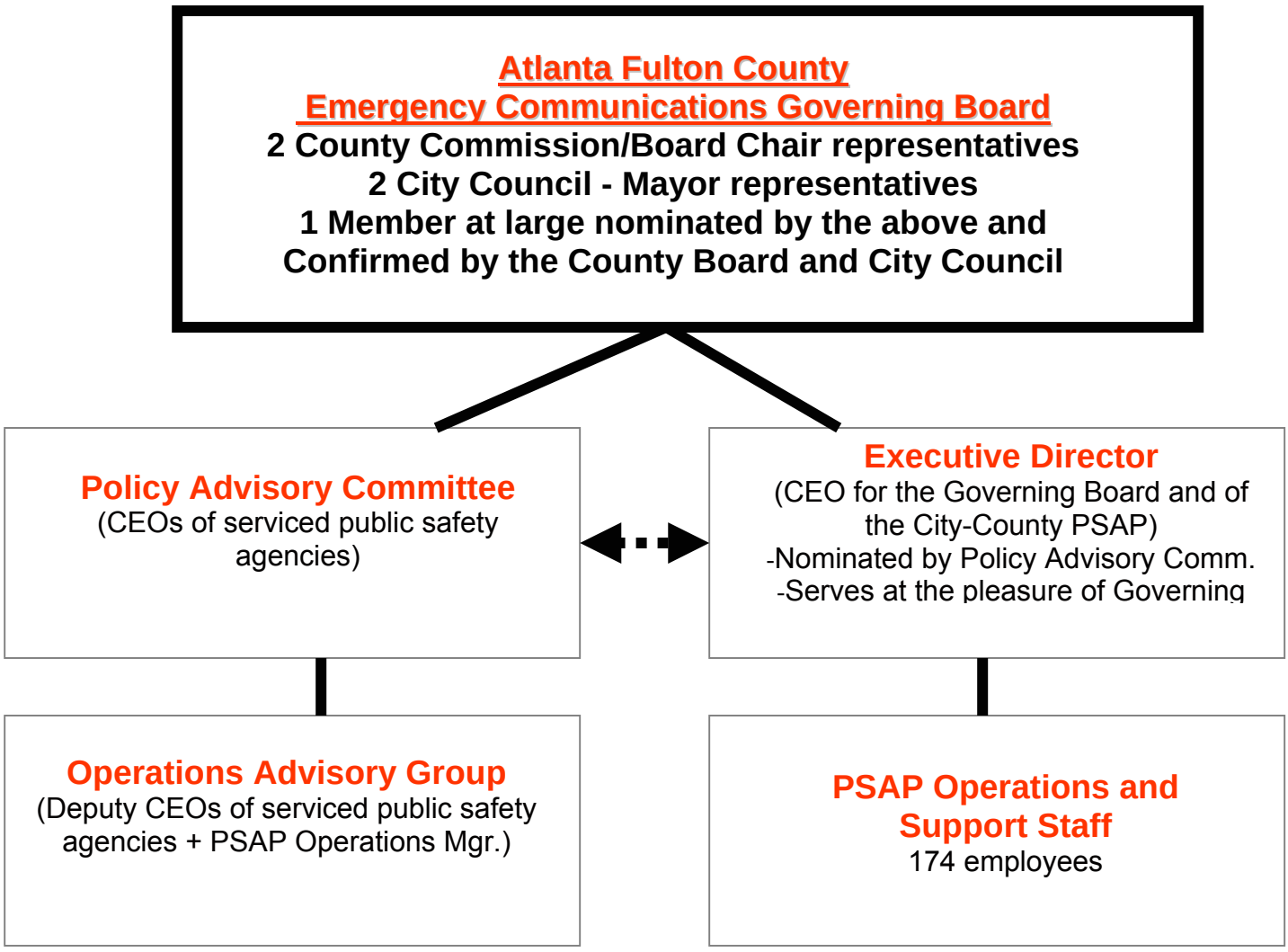
Once this high level Governing Board is formed, we see the Board appointing a **Policy Advisory Committee** consisting of Chief Officers of the law enforcement and fire agencies which will be served by the merged PSAP along with the Authority's Executive Director. We also see the Governing Board appointing an **Operations Advisory Committee** representing the field operations leaders (Deputy Chief level) of the response organizations being served by the PSAP, as well as the Assistant Director of the merged PSAP.

We see the Policy Advisory Committee being tasked to recruit for the position of Executive Director and to nominate a candidate to the Governing Board for their consideration. We also see the Governing Board being able to recruit and consider its own candidates for consideration.

We see the Executive Director being appointed by the Governing Board very early in the merger process, and being tasked with driving and overseeing the entire merger process.

We see the Operations Advisory Committee being heavily involved in the previously discussed Incident Code police and procedural development process and the development of uniform and standard operating procedures. We also see the Board choosing to contract with either the City or the County for the purposes of managing payroll and benefits through one of the exisiting organizations. (See next page for a diagram of this organizational structure)

With the above recommendations and structure, we believe we have set forth a pathway to achieving a governance structure that rises above the question of "Which Public Safety Agency Will Run this PSAP?" Rather, no public safety agency will run the PSAP, but it will be run by the elected leadership of the City and the County, with staff expertise from their appointed Executive Director (whom we believe must be a seasoned emergency communications professional manager). Further, neither the City nor the County has the upper hand on the Governing Board. Rather, either entity would have to sway the opinion of at least one other person to prevail, either their elected counterparts, or the fifth member, a consensus appointee of the two entities.


Atlanta Fulton County
Emergency Communications Governing Board
2 County Commission/Board Chair representatives
2 City Council - Mayor representatives
1 Member at large nominated by the above and
Confirmed by the County Board and City Council
Policy Advisory Committee
(CEOs of serviced public safety agencies)
Executive Director
(CEO for the Governing Board and of the City-County PSAP)
-Nominated by Policy Advisory Comm.
-Serves at the pleasure of Governing
Operations Advisory Group
(Deputy CEOs of serviced public safety agencies + PSAP Operations Mgr.)
PSAP Operations and Support Staff
174 employees

6. THE ISSUE OF THE "ECONOMIC MODEL"

Can an acceptable, equitable and feasible economic model be implemented for a merged PSAP to reflect expenditures and revenues?

Earlier we established that the annual direct and indirect labor costs for a merged PSAP would be about $11.35 million per year.

In those calculations we determined that about $9.9 million is spent annually now for direct and indirect personnel costs for the City of Atlanta.

Based on information provided by Mr. Sayani of the City of May 4, 2005, we have been advised that the total overall cost for operating the City's Police and Fire PSAPs (including the above personnel costs) was $16,244,548. ($14,404,196.73 for APD and $1,840,352.96 for AF/R). Also in this information there was reference to $1,830,000 paid to Northrop Grumman in their System Integrator role and $1,774,000 to Motorola for high level radio system maintenance services. These costs are not a part of the reported $16,244,548.

If we accept the assertion that the City of Atlanta's direct and indirect 911 PSAP personnel costs for 2004 were about $9.9 million, and if we accept the assertion that the above total of $16.2 million accurately represents the overall cost for the police and fire dispatch operations, then we see that personnel represents 61.1% of the City's total PSAP operating cost. From our prior experience, this strikes us as a very low number, indicating either an extraordinarily high non-personnel cost or extraordinarily low personnel costs. We are pretty confident in our personnel cost numbers, in that we have actual 2004 direct salary expenditure data for the APD PSAP, and that number comes to $5,548,403 which, plus the city's 39% indirect cost factor would total $7,712.280 for the police PSAP only.

Simply put, our experience tells us that the typical large PSAP organization runs at about the 85-95% level of their overall budget being for personnel, leaving some 5-15% in other costs.

For Fulton County 911 we have been provided with information that sets their total annual operating expenditure at $8,575,776 (after removing $6,349,224 paid to EMS service providers under the County's contract with them --- which, while a legitimate cost for the Department of Emergency Services, is not a cost of doing business as a 911 PSAP). Of this $8,575,776 overall cost total, $6,592,156 is for direct and indirect personnel costs, representing 76.87% of the total budget. However, a large cost item in the Emergency Services Department budget is the maintenance contract with Motorola for the 800 MHz trunked radio system @ $1,364,899 per year. This is a cost that most similar non field response agencies would not carry in their budgets, as it would be allocated out to the field departments using the radio system. If one removes this $1.35 million from the $8.575 million departmental total, we then see that the more comparable representative operating budget comes in at $7,210,877, of which direct and indirect personnel costs amount to 91.42% of the department's overall budget (not counting radio maintenance or payments to EMS providers).

At this point a comment is required on the issue of including the Motorola radio system annual maintenance contract costs in the cost basis for this merged PSAP. The bulk of this cost is for maintaining the radio system infrastructure (towers, microwave, controllers, base station repeaters, etc.) located throughout the system's service area. All users of the radio system use and equally benefit from this infrastructure, from public works dump trucks to fire trucks. Historically the cost of maintaining this system (and the term "maintenance" is something of a misnomer here, as much of this is NOT "break and fix" maintenance but rather system coordination, upgrade coordination, software version coordination and performance optimization) has been borne by the cost centers for the City's 911 PSAP and the County's 911 PSAP. Similarly, the proceeds from the respective 911 surcharges have gone to defray this cost.

We don't think it is fiscally "logical" to have an independent, merged 911 PSAP's budget (cost center) carry the costs of maintaining the entire radio infrastructure supporting all emergency and non emergency functions of the city and county government.

However, these costs are real and valid, and money to pay them will have to come from some department's budget in either or both the city and the county.

In an attempt to ascertain the total overall **public expenditure** for today's comparable cost elements for the City and the County to provide 911 call taking and radio dispatching, we should add the City's reported $16,244,548 and the County's reported $7,210,877 and we would come up with **an annual total of $23,455,425.**

Turning this process around, we believe we have pretty confidently established an actual 2004 direct and indirect personnel expenditure for all entities at around $15,717,781. And, this $15.7 million figure represents 90% of a total of $17,463,000. **Therefore, we are going to arbitrarily establish the overall public expenditure today for emergency communications in Fulton County and the City of Atlanta at $17,463,000, of which 41.29% is spent by Fulton County and 58.71% is spent by the city of Atlanta ($10,252,527).**

With this having been established, we can now proceed to establish the expected overall costs for the merged PSAP. Using again the "90% of costs are personnel" rule of thumb, we see we have projected total direct and indirect personnel costs of $11,345,297 which comes out to 90% of $12,606,000 per year.

$11,345,297 per year for direct and indirect staffing costs represents a potential reduction of $4,372,484 per year by merging, or 27.8% in staffing costs alone.

We will use the above $12,606,000 figure as the overall total recurring cost for dispatch center operations, not counting any external radio system maintenance costs, as those systems are largely used by agencies other than the 911 agency. We would, however, recommend adding an additional $2 million to this figure annually for various system integrator and/or maintenance agreements for high tech systems such as CAD, MDT, logging recorders, E911 CPE and ACD systems, bringing the **final annual recurring cost to about $14,456,000 per year**.

Based on the 2004 911 surcharge revenue figures the City collected $9,116,225 and the County collected $5,379,304 for a total revenue of $14,495,529 with 37.1% being county derived revenue and 62.9% being city derived revenues. Interestingly enough, the County's presumed "service population" of 232,000 amounts to 35.4% of the total 655,000 service population between the City and the County, so there is even some approximate external equity here.

Consequently, assuming the 911 surcharge revenue figures updated to 2007 reflect a small increase or are stable from 2004 it would appear as if there is adequate revenue from today's 911 surcharge revenues to cover the projected total annual operating cost of a merged City-County 911 PSAP. The 911 surcharge should generate about $14.5 million per year, and the cost of supporting the merged PSAP should come to about $14.5 million per year[1].

IMPORTANTLY, HOWEVER, THE ENTITIES MUST ACT SOON IN CONCERT WITH THE STATE AND OTHER ENTITIES TO SAFEGUARD THESE 911 SURCHARGE REVENUES.

To the extent that phone subscribers switch to VoIP service, which the U.S. Courts have ruled is not phone service and cannot be assessed normal phone type surcharges, there is a strong chance of real diminishment in this 911 surcharge revenue amount. Some states are already moving towards legislative changes that envision assessing 911 surcharges not on phone service, per se, but on the assignment of a phone number, since regardless of the underlying technology, even VoIP users will require a phone number.

[1] Under Georgia law, wireless carriers are permitted to retain up to 45 cents of the wirelss 911 surcharge per bill, although none are yet doing it and none are required to do it. To the extent they do it, it would negatively impact on surcharge revenues availale to the City and County.

7. THE ISSUE OF TECHNOLOGY AND/OR FACILITY HURDLES

Are there technology or facility hurdles which must be overcome before such a merger could happen?

Can said issues be resolved in time for other pressing timeline concerns?

Very significant issues surrounding technology will, no doubt, loom very large in this decision and in any implementation process that might follow.

One of the major foundations of these technological issues is that the City's PSAPs must vacate their current space within about two or three years. Based on our earlier discussion of this topic, we believe that moving significant equipment components from the City Hall East facility to any new PSAP (be it a city only PSAP or merged with the County) is not practical nor advisable. This is particularly true of the critical **prime site** for the entire City's trunked radio system, which is currently located at City Hall East (along with a critical microwave hop) and cannot stay there when the sale of the facility is completed.

Therefore, it is a given that because of the move, and not necessarily because of any potential of a merger, the City would otherwise need to acquire, at a minimum:

- New E911 CPE
- New Automatic Call Distribution (ACD) system
- New radio dispatch control consoles
    - Also need to be upgraded to interface with P25 upgrades in external and internal systems.
- New CAD workstations
    - It is assumed that main CAD processors could be migrated
- New logging audio recording systems
- New dispatch console furniture

Another significant factor in the consideration of technologies for any merged PSAP is the choice of the CAD platform to be used in the merged PSAP, and the downstream relationship between that choice and issues relating to the interface of CAD to records management systems (RMS), Mobile Data Terminal (MDT) systems. In many CAD systems (especially those without "open architecture") the issue of software interfaces from CAD to some other platform can be a rather expensive proposition, with custom software development being a requirement.

The CAD choice is likely a very pivotal issue in this process. Both agencies are using highly similar Motorola analog trunked radio systems. Both agencies are using largely similar Positron E911 CPE systems. Both agencies are using similarly functioning ACD systems. In these areas, there appears to be little area of potential conflict, nor any areas of customer preference which would be irresolvable. But in CAD, the two entities today use CAD software platforms that are

somewhat to significantly different. The City (both police and fire) uses the non-Windows™ PSSI™ CAD system. The County uses a newer Windows based CAD system provided by InterAct™. Between these two systems, there is at least one major difference as of this writing.

Specifically, the County had an operational requirement for specialized support for the EMS dispatching role from their CAD when they developed the RFP for their system several years back. This requirement relates to the ability of the EMS module in CAD to perform periodic and on-going calculations and to make recommendations as to where ambulances not already on a call should be positioned so as to maximize their opportunity to have the best response time to a next likely EMS event.

This is more than an esoteric technical requirement called for by the County's EMS dispatchers. In fact, it is a requirement that flows from the County's contractual relationship with Rural Metro Ambulance service to be the Advanced Life Support (ALS) service provider for much of the County outside Atlanta. Simply put, the County wanted a certain maximum average response time from its contracted ALS responders. Rural Metro was not willing to agree to that maximum average response time unless two conditions were met. First, they required a subsidy from the County to add crews to enable them to potentially meet the requirement. Second, they required that their dispatch agency (Fulton County 911) equip itself to take advantage of the above technology to perform ***predictive, anticipatory*** ambulance relocations. If the County cannot perform this service, the average maximum response time requirement is waived for that period.

At the time they published their CAD RFP, the County did look at and invite participation in their procurement process from PSSI (the City's CAD vendor). However, we are told that PSSI indicated that they could not provide the above functionality and were not interested in the custom development that it would require. We are also advised that InterAct also did not have the capability at that time, but did agree to the custom development work to make it happen, and they have done so.

As a result of this, it would appear as if this particular functionality is a **must have** for the County. As a result of this study process a renewed investigation of PSSI's current capability or inclinations in this regard is now underway between County staff and PSSI. This process was initiated after it became rather apparent that the City is **significantly committed to PSSI** as their CAD system provider going forward.

This significant commitment to PSSI flows from a number of executed and planned CAD actions and upgrades over the past few and upcoming months. Specifically, there has been a major commitment to integrate the operations of the Hartsfield-Jackson International Airport Fire-Rescue Service into the operations of the Atlanta Fire Department CAD system. (Airport fire is a part of the Atlanta FD, but has historically operated somewhat autonomously. These initiatives are intended to more fully integrate the airport fire operations onto those of the "regular" fire department.) This has meant the purchase of mobile data terminals and related interfaces for Airport Fire as well as for the PSSI CAD software for the Airport fire services own dispatch center, all at a cost of approximately $1 million.

Additionally, $4.7 million was spent on new APD mobile data capabilities and an upgrade to the PSSI RMS, which is interfaced to both CAD and the MDT system. Finally, the current main hardware platforms (the actual computers) on which the main CAD software resides and operates are scheduled to be non-supported by their vendor (HP) in 2006, and replacements at just under $1 million are programmed for 2006 expenditures.

With all of this activity and expenditure on the part of the City, the dollar and process investments in the PSSI CAD system seem virtually irrevocable.

Because the city's reliance on the PSSI CAD seemed so strong, it was suggested that the City-County project study team approach this question from the planning assumption that PSSI CAD **might be the default CAD system** for a merged PSAP, and work to rule that technology choice in or out before moving on to any other CAD related considerations. The work group agreed to tasking that set forth two basic steps:

1. To determine, once and for all, PSSI's willingness or ability implement the must-have software capabilities referenced above for ambulance relocations. If PSSI says it is possible and they are willing to do it, and it is not too expensive, then that would mean the county would not reject PSSI CAD as a possible CAD platform for a merged PSAP. Said inquiries are in process now.

2. To determine whether the basic functional capabilities of the PSSI CAD are appropriate to the way the County needs to or likes to do its dispatching activity. As covered earlier under our more detailed CAD discussion, CAD has a myriad of functions that it can be configured to perform. Some to many of those features or functions may or may not be needed or desired by a given user agency, while another user agency will call them "must haves". The issue here is that a contingent of the County's more astute CAD users need to closely examine not just how Atlanta uses PSSI CAD, but also how PSSI CAD can be used to determine how and whether or not its capabilities will fulfill the County's requirements. If this investigation reveals that PSSI would work appropriately for the County, then the County would presumably be more willing to consider adopting PSSI as the CAD system for a merged PSAP.

In conclusion, it would appear as if the prospects of a merger are not bright if the two entities cannot agree on PSSI as a CAD platform, as the first course, or InterAct as the second choice. Although it would be our sense that the City would not be prepared to abandon PSSI in any event.

Beyond CAD, some of the other technology platforms also merit examination. These and their various issues are as follows:

Radio control consoles: We have met and discussed this issue with Motorola. We believe that the prudent course of action would be to leave the current console Central Electronics Banks (CEBs) behind and install an all new Motorola CentraCom Gold Elite console system and new workstations in the new merged PSAP. This single CEB system and multiple workstations would

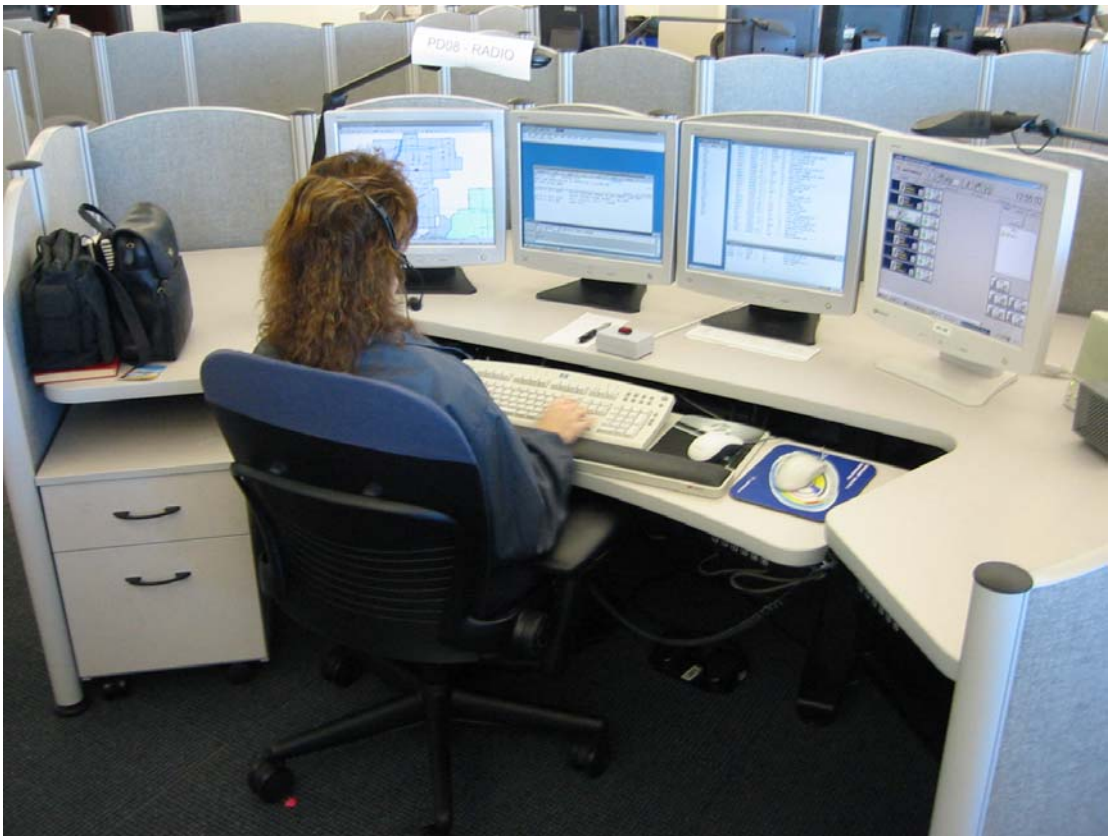
be able to effectively control **both of the independent Motorola trunked radio systems** operated by both the City and the County. Also, the current radio console workstations in use in both agencies are obsolete and are not capable of directly interfacing with the Motorola Astro 25 digital overlay system being installed in the metro region using the UASI funds. The entities should expect to pay in the vicinity of $50,000 each for these radio console positions installed and configured. We earlier identified the need to have at least 16 such radio dispatch positions for day to day dispatch configurations. Further, each supervisor needs access from their workstation to the radio system. We would recommend not less than 24 radio positions (including several for training) for the merged PSAP. Total cost to be in the vicinity of $1,200,000.

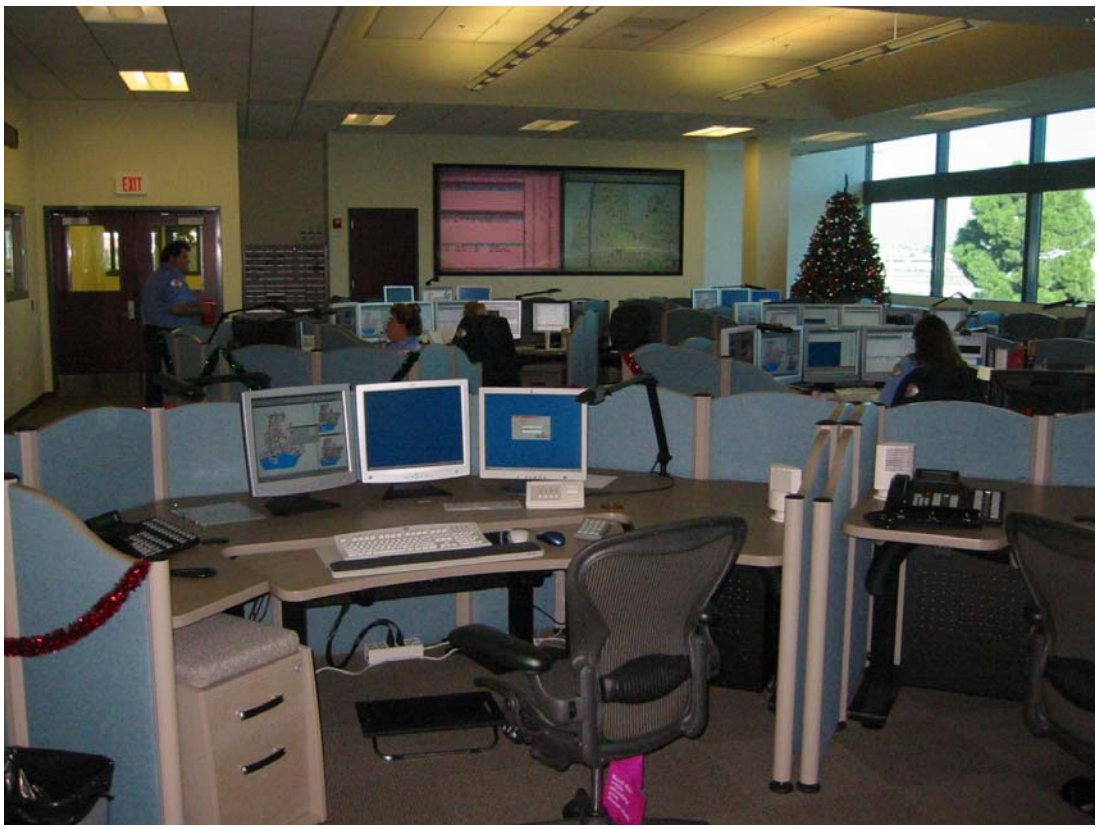
On a related issue, the Prime Site for the City's Motorola trunked system also needs to be relocated (due to the moving out of City Hall East and not due to any merger). Since this is not a cost related to the PSAP merger specifically, we have not identified a specific price for providing a new Prime Site at a location yet to be determined. However, we would agree with the assessment that said Prime Site not only does not need to be co-located with the merged PSAP, it probably should not be co-located. Not having to co-locate the Prime Site with the PSAP opens up the search for PSAP properties somewhat, since said PSAP site would not necessarily have to be a part of the main microwave loop network.

E911 Customer Premise Equipment (CPE): As stated earlier, new E911 CPE is required both because it isn't practical to move the existing equipment to the new PSAP, and because the current PSAP is not of the current state of design as it relates to E911 Internet Protocol (IP) compatibility. In an ideal world, we would recommend that this procurement be delayed for as long as possible, as the entire realm of IP standards for E911 CPE is in flux and will likely be so for a year or more. In any event, we would expect the merged PSAP to require 20 such E911 CPE workstations at a cost of about $55,000 each, for a total cost of $1,100,000.

Related to the E911 CPE is the cost of the ACD functionality for the PSAP. Depending on the CPE vendor chosen, the ACD functionality may be inherently a part of the E911 CPE. In any event , expect a cost additive of not less than $600,000 for this added functionality.

New dispatch console furniture: Unlike the current workstations (radio positions for sure, and some of the elements of the call taking positions as well) in the two PSAPs, today's PSAP workstations are designed in a far different way. Specifically, today's workstations presume that virtually all functionality will be accessible through one or more desktop mounted PCs at the workstation. Pictured below is a common new style PSAP police dispatch workstation at Long Beach, California. From left to right the PC screens represent GIS map, CAD interactive screen, CAD status screen and the Motorola CentraCom Gold Elite console control screen. This work station also elevates, lowers, has independent air control and light control. The lower picture on the next page is a call taker only position in the Long Beach Fire PSAP (co-located with but separate from Police). Note that this workstation has only three screens, with one being map, one being CD and one being Plant Equipment VESTA E911 CPE. You should expect to pay around $15,000 per workstation and not fewer than 45 would be required. Total: About $330,000.


PD08 - RADIO


EXIT

The PSAP Facility itself:

There are a wide range of options available when considering where a merged PSAP should be located, and in which kind of structure.

To begin with, we have established that the City Hall East facility is unavailable. Further, the current County 911 Center in the Public Safety Building on Peachtree Street is not capable of being expanded to support a work force nearly twice as large as it currently hosts.

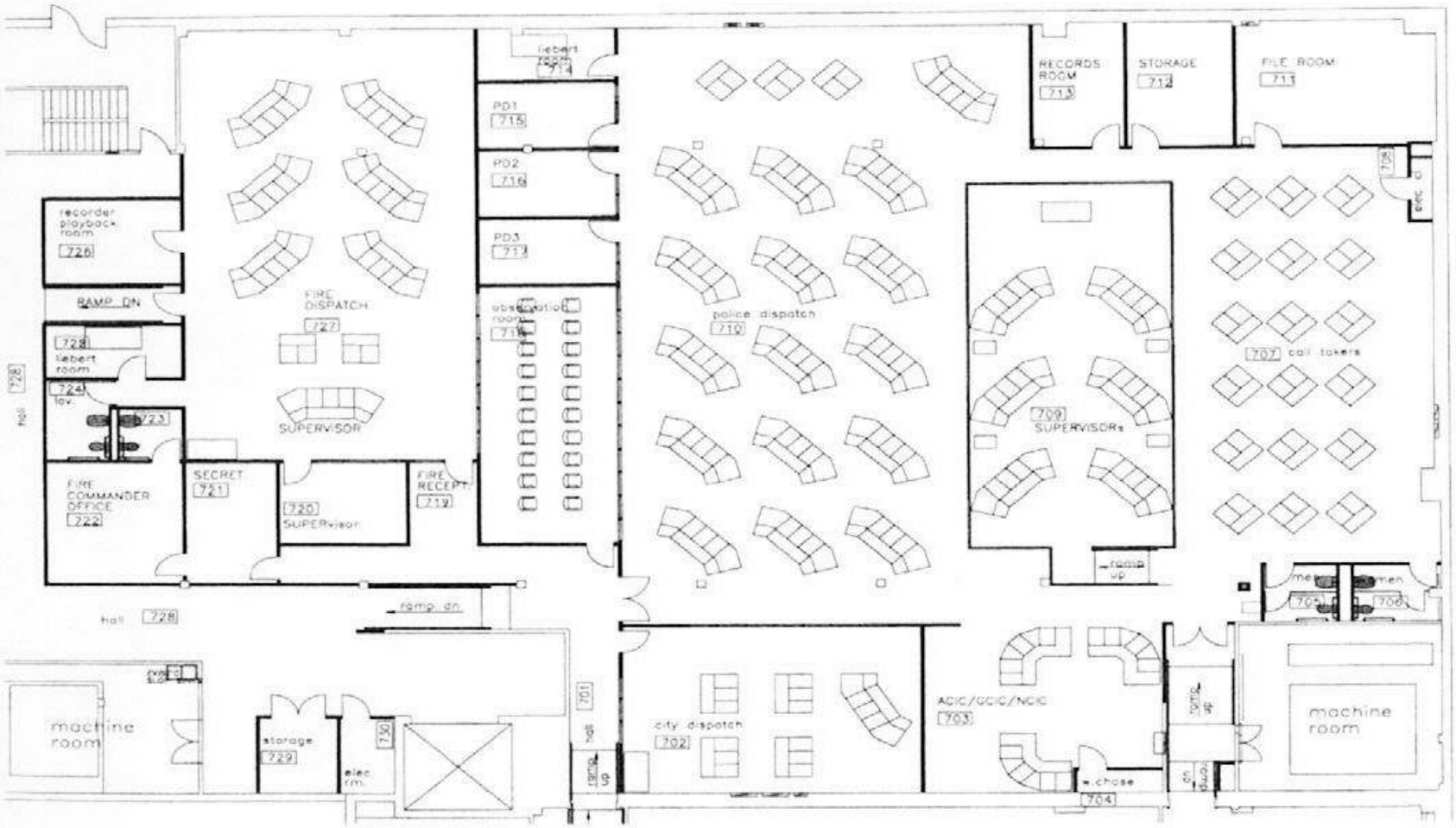
On the next two pages we are showing the two current floor plans and equipment layouts for both the co-located city police and fire PSAPs and the County's 911 Center. But on this page we are inserting a picture of what it undoubtedly the finest new PSAP facility we have ever seen. It is the new Long Beach California ECOC (Emergency Communications & Operations Center) Built at a cost of $41 million, it is significantly earthquake proof and houses (on the 1st floor) the City's Emergency Operating Center (EOC) and on the second floor the co-located but separately operated Police and Fire dispatch centers.

Above: City of Long Beach Emergency Communications and Operations Center (ECOC). The top floor houses the co-located (but operationally separate) police and fire PSAPs, and the lower level houses the City-wide Emergency Oprations Center. (See below)

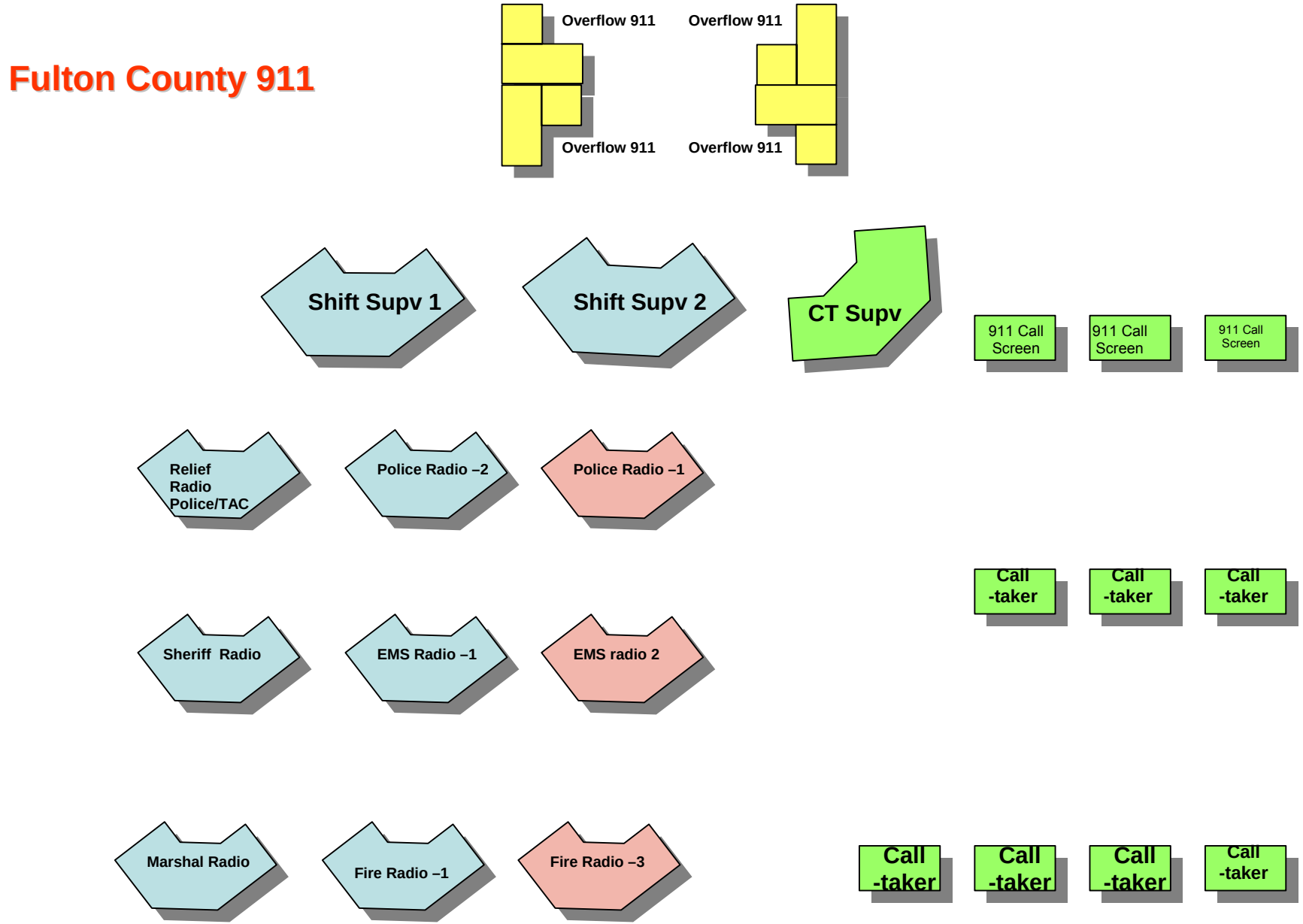
Above: Long Beach Emergency Operations Center (EOC)

Above: Another view of the Long Beach ECOC

Atlanta Police and Fire 911 PSAPs (Fire on left)



Fulton County 911



Our preliminary planning has determined that a new merged PSAP should have the following work areas:

- 4,400 square feet: Work area for 22 radio consoles, net of 200 square feet for each.
- 3,600 square feet: Work area for twenty 911 workstations at 180 square feet each
- 900 square feet: Work area for 4 supervisory work stations @ 225 square feet ea.
- 400 square feet: Assembly area for shift briefings/meetings
- 200 square feet Executive Director Office
- 525 square feet for 3 top manager offices @ 175 square feet ea.
- 600 square feet for 3 Shift manager/Ass't manager offices @ 200 square feet ea.
- 600 square feet for three clerical workstation
- 175 square feet for Office Manager work space/office
- 300 square feet for Technology manager/Ass't manager shared office
- 300 square feet for Training manager/Ass't manager shared office
- 1,600 square feet for training room
- 600 square feet for kitchen/break area
- 700 square feet locker room
- 1,500 square feet equipment room
- 2,500 square feet "swing space"

18,900 total net square feet, minimum.

Based on recent urban area construction projects we have been involved with we would anticipate that somewhere in the range of $250 per square foot would be required for new construction of the type appropriate (security wise) for a major urban dispatch center. At not less than 18,900 square feet, that would come to $4,725,000, plus the cost of any land to be acquired.

For renovation construction costs we would plan for around $175 pr square feet and a total construction cost of $3,307,500, plus the cost of acquiring the structure to be renovated.

We would strongly recommend a facility outside of the major downtown area, with high security fencing and parking lot lighting, and an ample free parking lot to service the largely female 24/7 work force. We would also encourage location on the MARTA line, or at least a major bus line.

We would not recommend co-location of the City's radio maintenance service with the new PSAP, as there are few, if any, inherent advantages in this arrangement. Typically we see radio maintenance services best located with overall fleet maintenance facilities, as they get heavily involved in radio installs and removals and other related electronic equipment installs.

Clearly any PSAP facility must be designed with environmental survival in mind and not be one susceptible to tornado damage, flooding, or other natural disasters. It also needs significant security, and should be able to be served with electrical service from diversely routed commercial power service and telephone service. Close access to fiber for connectivity to radio systems and related systems is also desirable. Major emergency generator capability must be provided. An ideal type of facility may be a former Network Operations Center (NOC) for a telecommunications carrier or similar.

Final facility cost estimates:

We think that preparing or constructing a facility for the merged PSAP would cost between $3.3 and $5 million if done economically. It could easily run to $10 million with added features and functions. We think that new PSAP equipment for the facility (assuming an existing CAD platform is relocated to the facility) would run around $4,000,000.

Assuming a top end cost of $15 million for a new/renovated facility, and assuming a bonded debt for 20 years, the annual debt service on $15 million would be around $1,139,000 per year assuming a 4.5% bond rate. This amount may be able to fit within the 911 surcharge revenue figure established earlier, once that projection is updated to reflect anticipated 2007 collections. However, we are not aware of whether or not Georgia law permits using 911 surcharge proceeds to pay bonded debt for a building.

Need for a Back-Up 911 center:

Whenever an entity operates a facility such as the one we have described here, considerable thought must also be given to the premise that said facility may, for one reason or another, not be able to be occupied or used due to some natural or man-made situation. There are five major ways in which the need for a back-up or alternate facility can be addressed:

1. One can build a nearly redundant facility at a remote location and keep it current and exercised and move to it on a moment's notice. This is the most expensive and least often chosen alternative.
2. One can take component parts of the to be vacated dispatch centers and use them to partially equip a scaled down back-up facility with relatively rudimentary radio control capabilities and provisions to operate in a "manual card dispatch mode" not unlike that which was described earlier in this report. This is a fairly common approach taken by the largest PSAPs in a metro area who can't afford or chose not to implement the #1 option above, and who are too large and busy to have any of their neighbors take their work load.
3. One can assume that no specific facility can be assumed to be available at any time and one can create a "portable back-up PSAP" using RF control stations for radio system access, mobile data terminals for CAD access or manual card operations and then house the equipment in something like a 53 foot a "crash trailer" (like semi trucks pull) and move the trailer to wherever there are phone lines, power and access to the telephone network. Some E911 CPE vendors actually support remote operation of E911 telephony from a laptop dialed into the public switched telephone network.
4. One can make arrangements with one or more neighboring good sized PSAPs in other Counties to either back each other up (space permitting) or to share a back-up facility amongst the several agencies.
5. If an entity chooses to also implement a 311 service and separate 311 answering center, it is possible to configure said 311 center to be an alternate PSAP to the 911 center. Of course, this would mandate that the 311 center be remotely located from the 911 center. It would also entail some of the same technology currency issues referenced in #1 above.

Conclusion:

We believe we have made the case that a merged City of Atlanta – Fulton County 911 PSAP could:

- Provide more streamlined and efficient service for the calling public
- Provide greater coordination among public safety agencies
- Save from $3 million to $5 million per year
- Be able to nearly, if not completely, "pay for itself" through 911 surcharge proceeds.

Having said this, we and the entities should have no illusions about the hard work, hard decisions and rough spots that will face which ever group is tasked with implementing such an undertaking. **There will be many interest groups who will not favor this approach**. Their appeals will be loud and persistent. Some political bodies will listen closely to their appeals. Some may even take their concerns as their own. We have seen several such proposed large city-county mergers not happen when the case was strong for them to happen.

But we have also seen them happen and happen successfully. A partial list of those to which we have had personal exposure are: (This list only reflects some major cities which have merged their PSAP operations with their County)

- Pittsburgh, PA and Allegheny County
- Madison, Wisconsin and Dane County
- Rochester, New York and Monroe County
- Wichita, Kansas and Sedgewick County
- Greensboro NC and Guilford County
- Duluth, MN and St. Louis County
- Corpus Christi, TX and Nueces County
- Portland, OR and Multnomah County
- Omaha, NE and Douglas County

Finally, we strongly recommend that the City and the County not plan on "out-sourcing" this merger process if it is decided to move forwards.

To the degree that major roles and decisions and major activities are placed in the hands of contractors, system integrators or other non governmental stakeholders, we predict that there will be a distancing from the outcomes by those who will be most affected by these outcomes. We strongly urge that a core group of committed long-term employee participants be identified and tasked to be the project implementation team. This is an essential element, we believe, in developing ownership of the issues, opportunities and the solutions that are developed.